

Desert

OCTOBER, 1952 35 Cents

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Letters

Through Yon Window . . . Gold?

Ontario, California

Desert:

I was very interested in John D. Mitchell's "Lost Mine with the Iron Door" in the July issue of *Desert Magazine*.

Mitchell indicates the lost mine is located one league northwest of the *Ventana* or "Window Rock" in the Catalinas. According to this story, "when the miners stood at the mouth of the tunnel, they could look to the southeast and see through this window."

On the south slope of the Catalinas, near the top, there is a rock formation with a *Ventana* facing in a southerly direction. Situated as it is, it is possible to look through it to the southeast, south or southwest.

On top and at the west end of this formation is a stone face carved by nature. A picture taken looking toward the southeast shows the image facing the northeast.

Although the directions do not gibe exactly, could it be that nature placed this stone sentinel to watch and guard the entrance to the Lost Mine with the Iron Door?

R. L. WITTER

"Beercan Highway" . . .

Portal, Arizona

Desert:

I have long been engaged in a one-man campaign to remove beer cans and litter from our highway-sides. I am glad to learn, from "Between You and Me" in the September *Desert*, that I have company.

In this editorial, it is suggested that the brewing companies be forced to pay for the roadside cleanups. However, I cannot feel that the fault is with those who sell cans, but rather with those who use them.

I have written a humorous satire called "Beercan Highway" which will be published in *American Forests* in the spring. I suggested to the editors that breweries be approached and persuaded, if possible, to include in their advertisements a note reminding their customers: "Keep America's Highways Clean! Please do not throw our cans out of your car." This would make them thousands of friends and might have an effect on the thoughtless nitwits who heave their empty cans out on your roads and mine.

Vandalism of all kinds is becoming



This rock formation in the Catalina Mountains of Arizona may be the clue to the long-lost Mine with the Iron Door, believes Desert Reader R. L. Witter.

ing one of America's foremost problems today. I believe more of this type of "Beercan Highway" article might reform some of the worst offenders. No one likes to be called a moron, and these articles definitely put vandals and beer can throwers in that class.

WELDON F. HEALD

Rockhounds Take Warning! . . .

Salt Lake City, Utah

Desert:

Recent issues of *Desert* have carried brief notes mentioning talks given before gem and mineral groups by members of the National Speleological Society. I would like to point out that slides illustrating these talks always show cave minerals *in situ*, it being against society policy to collect even broken specimens. To do so would encourage others to break off specimens, soon producing a thoroughly vandalized cave.

Rockhounds should further be warned against collecting in caves since in most states and in all national parks and monuments it is against the law. Violators are subject to maximum fines

of \$500 and six months in jail. In view of the terrible desecration common in western caves, the society will vigorously aid the prosecution of any such vandalism discovered.

Many mineralogists innocently seek cave specimens. A warning against such collecting might prevent serious trouble as well as protect the beauty of many a cave.

DR. W. R. HALLIDAY

Member, Board of Governors
National Speleological Society

Virgin or Virgen? . . .

Washington, Utah

Desert:

In "Lost Lead of the Santa Clara" in the September issue, I notice *Desert* uses the modern spelling of the Virgin River.

I spell it Rio Virgen, the way it appeared in the old geographies. Many of us maintain that it was named for Thomas Virgen, one of Jedediah Smith's men, and not by the Spaniards after the Virgin Mary.

Escalante called it "Sulphur River" because of the sulphur springs near La Verkin.

RUFAS JOHNSON

DESERT MAGAZINE

DESERT CALENDAR

September 27-October 6—New Mexico State Fair, Albuquerque, New Mexico.

September 29-30—San Geronimo Fiesta, Taos, New Mexico.

October 1-2 — Taos Village Fiesta, Taos, New Mexico.

October 1-31 — Special Exhibit of American Indian handicraft from collection of the late Kathryn W. Leighton, noted artist. Southwest Museum, Highland Park, Los Angeles, California.

October 3-4—Spanish Village Fiesta, Rancho de Taos, Taos, New Mexico.

October 4—Feast Day of St. Francis of Assisi, patron saint of Santa Fe. Santa Fe, New Mexico.

October 4 — Annual Fiesta and Dances, Nambe Indian Pueblo, New Mexico.

October 4-6 — Navajo Indian Fair, Shiprock, New Mexico.

October 5—Fifth Annual Colorado River Outboard Motor Boat Race, Needles, California.

October 7-11—Eastern New Mexico State Fair, Roswell, New Mexico.

October 9-11 — Las Cruces Lions' Cotton Carnival, Las Cruces, New Mexico.

October 9-12 — Tri-State Fair and Rodeo, Deming, New Mexico.

October 10-12 — Greenlee County Fair, Clifton, Arizona.

October 11-12—Annual Liars Contest (formerly on New Year's Eve) and Pegleg Smith Gold Trek, Borrego Valley, California. (See page 16.)

October 17-19—15th Annual Pioneer Days Celebration, Twentynine Palms, California.

October 18-19—Cochise County Fair, Douglas, Arizona.

October 19-25—Southwestern Cattle Festival. Clovis, New Mexico.

October 31—Hallowe'en Mardi Gras, Barstow, California.



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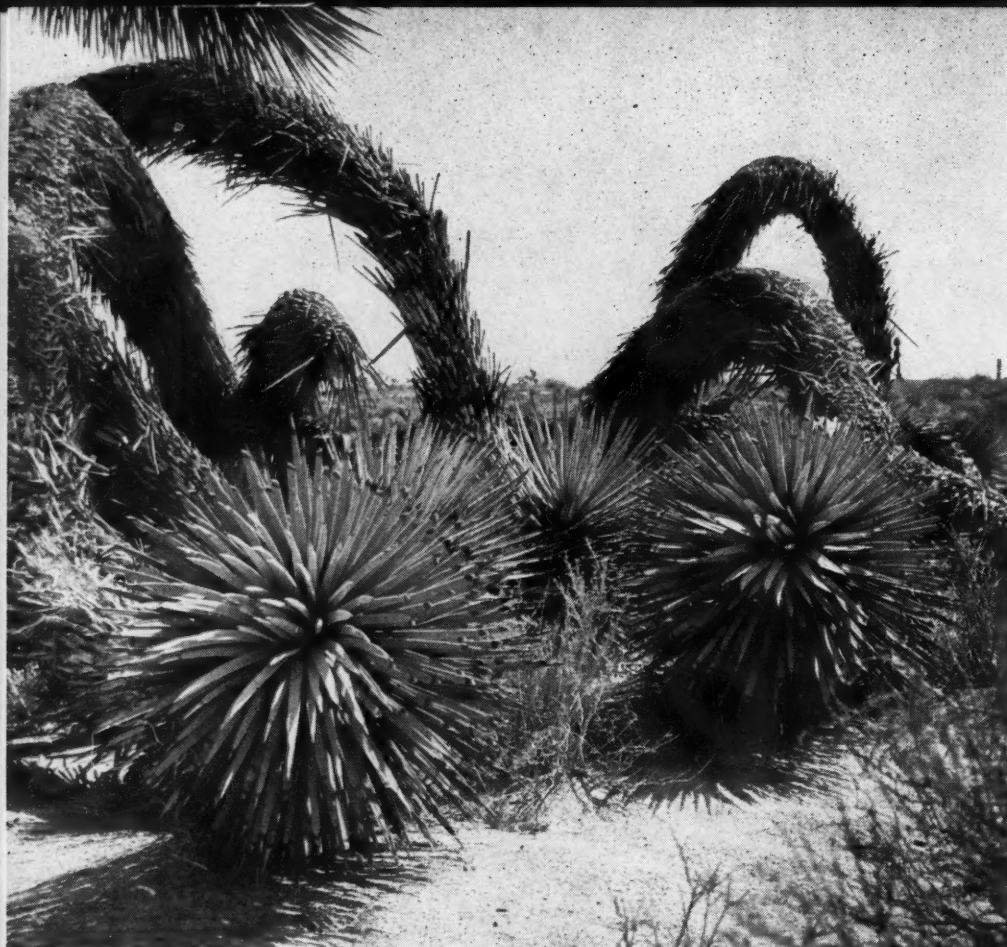
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OCTOBER, 1952



Twisted Joshua tree along U. S. Highway 395 south of Red Mountain, California. Photo by Alice Puster of Pomona, California, was awarded second prize in Desert Magazine's August Picture-of-the-Month contest. It was taken with an Argoflex camera, Super XX film, 1/100 second at f16.

MONEY CAN'T BUY

By THELMA BLACK
Whittier, California

Money can't buy the cool, blue dawn,
The smell of the sage the dew lies on.
Money can't buy the lonesome low
Of a dogie that's lost and knows not where
to go.
Money can't buy the faith it is true
Of a stout hearted horse that will carry you
through.
The desert storm, the desert sand,
The sweat and thirst of the desert land.
Money can't buy the crimson glow
Of the western sky when the sun is low.
Money can't buy the warm desert gale,
Or the soft thud of hoofs on an alkali trail.
Money can't buy the campfire's cheer,
Or the cry of a nightbird hovering near.
Money can't buy a life free and fine
And wild and untamed as the coyotes' and
mine.

DESERT HILL FOR LISTENING

By GASTON BURRIDGE
Downey, California

I like to sit upon this hill
Just listening to the quiet.
No railroad for a hundred miles,
No motor road comes nigh it.
Few air-men ever saw these brown,
Uneven mountain shoulders
And fewer still of trailsmen have
Consorted with these boulders.
It is a lonely, friendly place
Where eagles circle slowly,
An altar for the moon to light,
For storm-clouds to make holy.
No distant humming motor bus,
Few, but winds, come by it.
I like to come upon this hill
And just listen to the quiet.

DESERT PEACE COMES WITH MOONLIGHT

By PAUL WILHELM
Thousand Palms, California

I watched the moon rise out of desert hills.
Peace comes with moonlight and the even-
ning glow,
With cry of coyote, calling whippoorwills
And whispers in these ancient palms I know.
Peace comes in fragrance from rippled
dunes
Kissed by the moonlight, cooled by winds
of night,
Peace comes with bark of fox stalking sand
dunes,
From silver fronds reflecting star's pale
light.
A cricket's lullaby lends drowsy peace
And piping frogs within a spring's deep
heart,
Songs new in these old hills that will not
cease
Though we, too, rest eternal and apart.
Hills somber in the moonlight strangely
bring
The heart sad joy, and light and song to me.
More clear than curlew's lulling cry, I sing
Enchanted by this peace, this moon beauty.

ATTENTION, RABBITS!

By GRACE PARSONS HARMON
Desert Hot Springs, California
Attention, rabbits, gophers, mice,
All denizens at large!
You've nibbled down my cactus bed
For moisture—without charge!

With all this rain we've had to date,
Your water store is big—
It's soaked five feet, E. Jaeger says.
O. K.! Get out and dig!

Land-Locked Sea Monster

By ALICE PUSTER
Pomona, California

What strange weird things I see
In the twisted branches of a Joshua tree;
A two-headed sea monster thrashing about,
Its feelers and tentacles reaching out
Twisting and turning in its sea of sand,
For the unwary caught near at hand.
So don't go too near, unwary one,
But come stroll with me 'neath the desert
sun:
We'll look for other strange fantasies
In the twisted limbs of a Joshua tree.

A DESERT FAIRYLAND

By SUSIE EAGLESON

My soul in solemn reverence knelt today
For I'm sure the Great Creator passed this
way.
I stood where yesterday was barren sand
And gazed upon a Desert Fairyland.
The regal lilies with their snowy crest,
So like the silken ruffles on a bridal dress,
Brought to my mind the words of Jesus when
He said, "They toil not neither do they spin."
Yet the royal robes of Solomon ne'er com-
pared
With all the gorgeous colors growing there.
The mountains in a gay parade were clothed
In robes of purple interlaced with gold.
While nestling at their feet in sandy nests,
Like babes afraid to leave their Mother's
breast,
Were tiny snow-white flowers with golden
hearts
So small and yet they still must have their
part
In all this glorious Desert Fairyland
Fashioned by our Great Creator's hand.
The yellow daisy and the blue lupine,
The stalwart primrose with its golden sheen,
All turn adoring faces to the sun
And curtsy and dance until the day is done.
No words can e'er describe the beauty there;
The soul of man can only kneel in prayer
And thank the loving Father on that day
Should He perchance again to pass this way.

FLOWER SHOW

By LUCY BARKER
Long Beach, California

When winter winds have spent their flair
In far flung dust and sanded air,
The desert comes into its own
And wraps the peace that spring has grown
About itself. It opens wide
The garden gate that none can hide
Its transient bloom of brilliant flowers.
Each vibrant hue reflects the hours
Of love within the desert heart—
And prompts this show of living art.

Somewhere in Eternity

By TANYA SOUTH

Somewhere in Eternity
The highest heights still wait for me.
The sweetest Heaven ever known
Beckons. Naught that I have done
Compares in grandeur with those fine
And noble splendours that await
In the eternal and divine
Future Fate.



At the dedication of the Nevills plaque, left to right, Barry Goldwater, master of ceremonies, Frank E. Masland, Joan Nevills, Sandra Nevills, Mary Ogden Abbott, sculptor, and Mrs. Mae Nevills.



The Nevills plaque will remain on the canyon wall just beneath Navajo bridge over the Colorado River, as a permanent tribute to the memory of the famous riverman and his wife, Doris.

Nevills Plaque is Dedicated

Following is the inscription engraved in bronze on the plaque shown above.

THEY RUN THE RIVERS OF ETERNITY
IN MEMORY OF
NORMAN D. NEVILLS
APRIL 9, 1908—SEPTEMBER 19, 1949
AND DORIS, HIS WIFE
MARCH 11, 1914—SEPTEMBER 19, 1949
WHO SOUGHT AND RAN AND MASTERED
THE WILD AND SECRET WATERS
SAN JUAN RIVER • GREEN RIVER
COLORADO RIVER • GRAND CANYON
SALMON RIVER • SNAKE RIVER
BY THE RIVER THEY LOVED SO WELL
IN THE DESERT THAT WAS THEIR HOME
THIS RECORD IS PLACED BY
THE CANYONEERS

MOTORISTS TRAVELING from the South Rim of Grand Canyon to the North Rim, and vice versa, cross the Colorado River on Navajo bridge in northern Arizona.

Beneath the steel girders at the western abutment of this bridge a little group of Grand Canyon voyagers and their friends gathered from across the nation last July 11 to honor the memory of one of the West's greatest rivermen, Norman Nevills—and his wife, Doris.

Nevills' adventurous career as a pilot-boatman on the wildest rivers in western United States came to an end September 19, 1949, when he and Doris plunged to their death in a rocky canyon just after taking off in their private plane at their home at Mexican Hat, Utah.

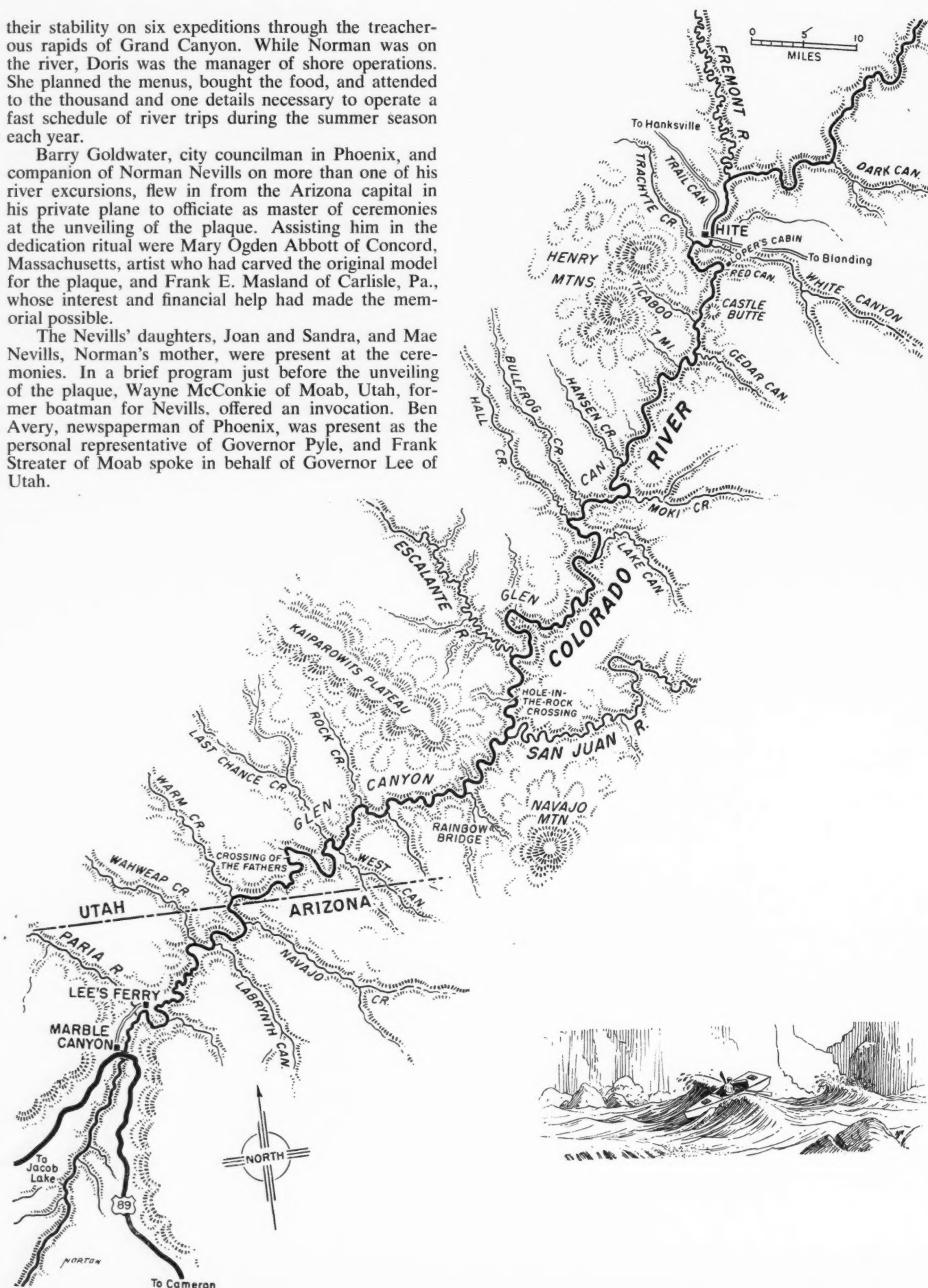
Immediately after their tragic death, friends of the Nevills began making preparations for a memorial—and the gathering at Navajo bridge last July was for the unveiling of a bronze plaque which had been in the making for more than two years.

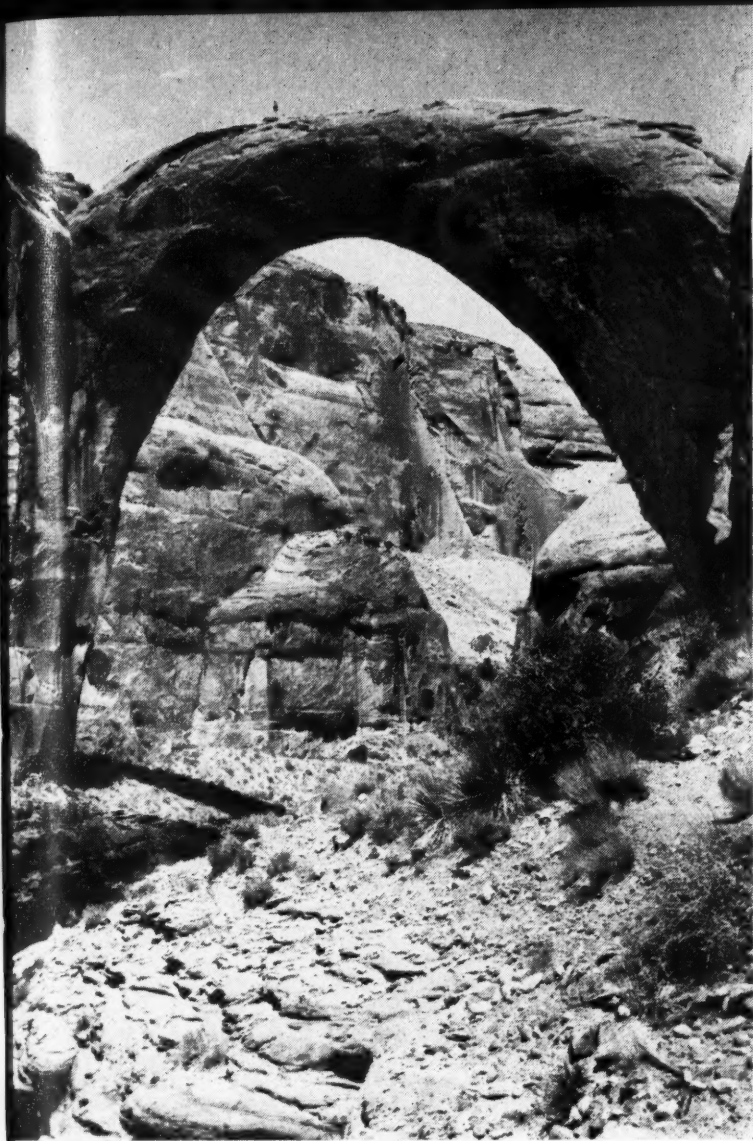
For 10 years, Norman and Doris Nevills had operated as a team. Norman was the designer and builder of the rugged little cataract boats which had proved

their stability on six expeditions through the treacherous rapids of Grand Canyon. While Norman was on the river, Doris was the manager of shore operations. She planned the menus, bought the food, and attended to the thousand and one details necessary to operate a fast schedule of river trips during the summer season each year.

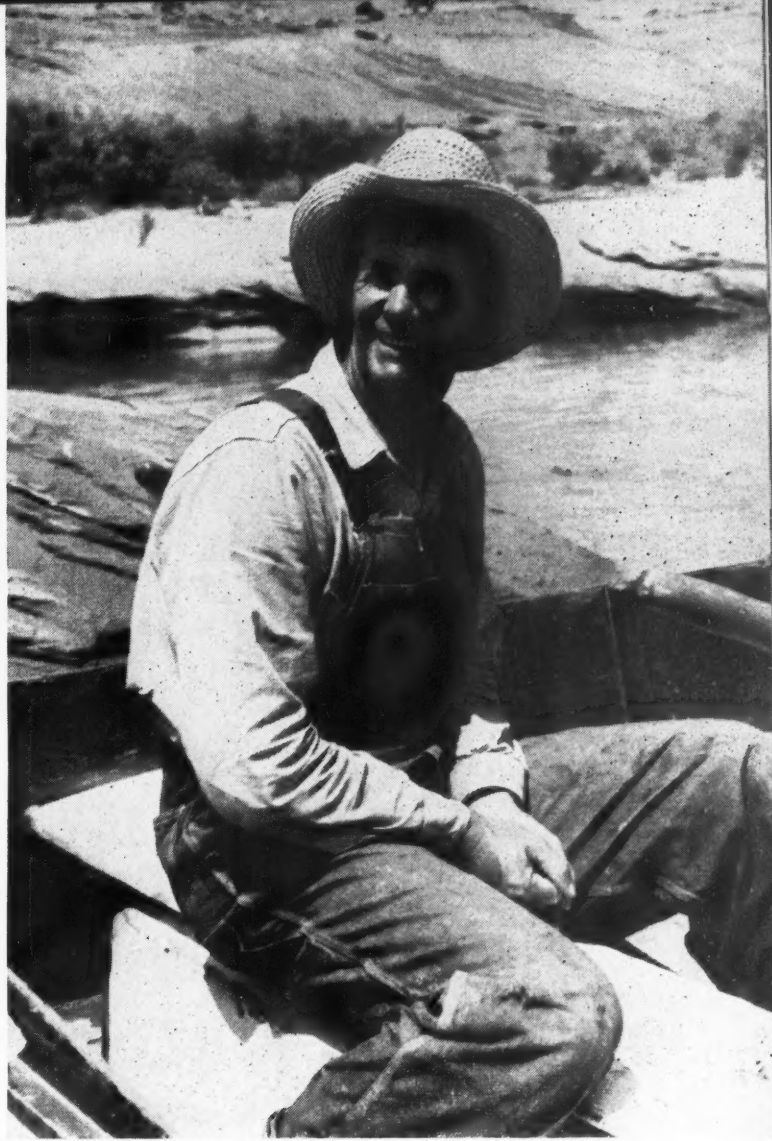
Barry Goldwater, city councilman in Phoenix, and companion of Norman Nevills on more than one of his river excursions, flew in from the Arizona capital in his private plane to officiate as master of ceremonies at the unveiling of the plaque. Assisting him in the dedication ritual were Mary Ogden Abbott of Concord, Massachusetts, artist who had carved the original model for the plaque, and Frank E. Masland of Carlisle, Pa., whose interest and financial help had made the memorial possible.

The Nevills' daughters, Joan and Sandra, and Mae Nevills, Norman's mother, were present at the ceremonies. In a brief program just before the unveiling of the plaque, Wayne McConkie of Moab, Utah, former boatman for Nevills, offered an invocation. Ben Avery, newspaperman of Phoenix, was present as the personal representative of Governor Pyle, and Frank Streater of Moab spoke in behalf of Governor Lee of Utah.





Rainbow bridge, with two members of the party on top.



Frank Wright, senior pilot of the Mexican Hat Expeditions.

Glen Canyon Voyage

By RANDALL HENDERSON
Map by Norton Allen

LAST FEBRUARY Jim Rigg wrote to me: "In connection with the dedication of the Nevills plaque at Marble Canyon next July, Frank Wright and I are planning a trip down the Colorado River through Glen Canyon from Hite, Utah, and we would like to have you as one of our guests. We plan to leave Hite on July 4 and reach Lee's ferry July 10, the day before the dedication."

I was glad to accept this invitation, for I have long wanted to become better acquainted with certain landmarks along the upper Glen Canyon sector of the Colorado. I had previously navigated lower Glen Canyon with both Norman Nevills and Harry Alson, but the sector above the Escalante River junction was still strange to me.

Major John Wesley Powell, who first explored the Colorado River in 1869, and again in 1872, was respon-

When Norman and Doris Nevills met tragic death in an airplane accident in September, 1949, the river boats which Norman had designed and built for his river excursions were purchased from the estate by J. Frank Wright of Blanding, Utah, and James Rigg of Grand Junction, Colorado. Wright and Rigg had served as boatmen, and had acquired skill in running the rapids under the tutelage of Nevills. For three years the team of Wright and Rigg, operating as Mexican Hat Expeditions, have been carrying on successfully the river traditions left them by the Nevills.

sible for the sector names given to the various canyons through which his little river flotilla passed. Below Moab, Utah, Powell encountered a rugged series of rapids extending for a dis-

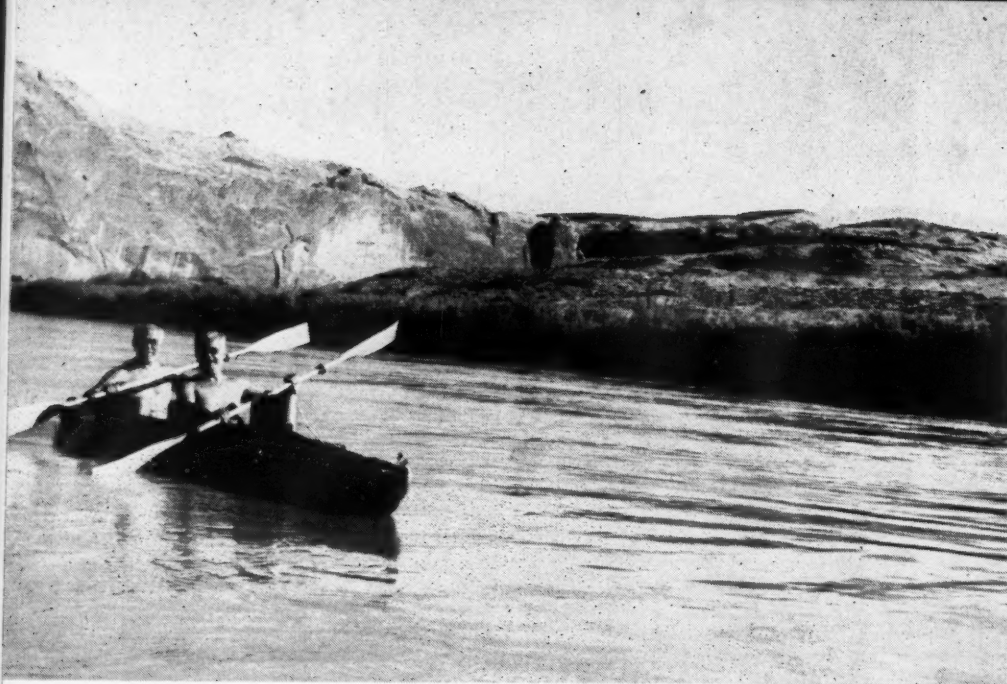
tance of 20 miles, and he called this sector Cataract Canyon.

Below Cataract Canyon the river flows through Glen Canyon as far as the mouth of the Paria River. At that point Glen Canyon gives way to Marble Canyon, and below the junction of the Little Colorado Marble Canyon becomes Grand Canyon.

In Cataract, Marble and Grand Canyons the river plunges down steep declivities, forming rapids which have given the Colorado River its reputation as a treacherous stream to navigate.

But sandwiched in between Cataract and Marble Canyons, from the tributary Fremont River to Lee's ferry, is a 149-mile sector where the mighty Colorado flows in a deep well-defined channel with hardly a riffle to break the surface of the water.

On his original voyage of exploration Powell called this sector Mound and Monument Canyons, but on his second trip he renamed it Glen Can-



yon. The best description of this canyon was written by Lewis R. Freeman who accompanied U. S. Engineer E. C. La Rue on a surveying expedition here in 1922. Freeman wrote:

"Glen Canyon is the Grand Canyon on a slightly reduced scale; but what it lacks in sheer magnitude it makes up in the added charms of its gentler natural beauties. Although its walls are neither less sheer nor less lofty than the average run of those of the Inner Gorge of the greater chasm, the less torrential current of the river—due to slighter declivity—in Glen Canyon has permitted the formation of more frequent and more fertile stretches of wooded bank and bench. One is never out of sight of trees, nor often of flowers . . . But the crowning glory of Glen Canyon is in the bower-like amphitheatres of verdure that are responsible for its name . . . they form an almost unbroken chain of hanging gardens through the 150 miles from the mouth of Fremont River to the head of Marble Canyon."

This is the canyon through which Frank Wright and Jim Rigg of the Mexican Hat Expeditions proposed to make a 7-day run preceding the date of the Nevills dedication at the head of Marble Canyon.

Our starting point was to be at Hite where Art and Della Chaffin operate a ferry across the Colorado River (*Desert Magazine*, February '52). The crossing at this point was named for Cass Hite, a recluse who had settled there in 1883. In 1898 when reports were circulated through the West that the sands of the Colorado River were rich in gold, there was a stampede of fortune-hunters to this area and in 1900 a postoffice was established at Hite.

The place soon became too crowded for Cass Hite and he moved downstream and built a little hermit's cabin at the mouth of Ticaboo Creek where he died in 1912.

The postoffice at Hite was closed when the sands of the Colorado failed to yield enough gold to pay for the mining. But since this was one of the few points along the Colorado River



Above—Frank E. Masland and Dr. Josiah Eisaman in the fold-boat with which they accompanied the expedition through Glen Canyon.

Middle—On the sandbar at Forbidden Canyon. Rubber boat trips through Glen Canyon have become very popular.

Below—Old log cabin built by the late Bert Loper, veteran river man, six miles below Hite ferry.

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GAZINE

where it is accessible for approach roads on both sides, the place has remained on the maps as a river crossing. Many Utahans believe that eventually a bridge will be erected here.

A majority of the members of our party assembled for the expedition on the morning of July 3 at the home of Frank Wright in Blanding, Utah. Here food for our 7-day trip was packed, and sleeping bags assigned to those who did not already have them. Early in the afternoon, in a station wagon and a truck carrying the three boats for our river trip, we headed up over Elk Ridge on the road to Hite crossing, passing between the buttes known as the "Bear's Ears" and continuing past the Natural Bridges National Monument to the Chaffin ferry landing.

Intensive prospecting since World War II has disclosed several uranium deposits in this area, and a mill for the processing of the ore has been erected along the Colorado River just above the ferry.

The Chaffins were away when we reached the river, and the ferry was being operated by Reuben and Beth Nielsen.

Three members of our river party arrived at the crossing the morning of July 4, having come in from the west by way of Hanksville. When the boats were launched and passengers assigned to their seats our roster was as follows:

In the boat *Music Hall*: Frank Wright, boatman, and Tad and Mary Jane Nichols of Tucson, Arizona, passengers.

In the *Redbud Canyon*: Bob Rigg, boatman, and Warner Seeley of Cleveland, Ohio, and his daughter Susan, passengers.

In the *Hidden Passage*: John Harper, boatman, and Mary Ogden Abbott of Concord, Massachusetts, and myself, passengers.

The boats, named for tributary canyons along the San Juan and Colorado Rivers, were built by Norman

Above—Members of the expedition, left to right, Randall Henderson, Frank Masland, Frank Wright, Tad Nichols, John Harper, Mary Jane Nichols, Mary Ogden Abbott, Dr. Josiah Eisman, Bob Rigg, Susan and Warner Seely.

Middle—Night camps generally were on sandbars where there was driftwood.

Below — Typical lunch menu: Lemonade, canned ham, canned fish, cheese, pickles, relish and bread.



Nevills, and taken over by Wright and Rigg following Nevills' death in 1949.

A fourth boat arrived on the scene just before we shoved off early in the afternoon of July 4. This was a graceful two-passenger foldboat which Frank E. Masland brought from his home in Carlisle, Pennsylvania, in a package not much bigger than a suitcase, and assembled at Hite landing. Accompanying Masland was his friend Dr. Josiah Eisaman of Pittsburgh.

Their little canvas craft, weighing less than 60 pounds and fashioned somewhat after the lines of a kayak, proved to be a fast sea-worthy boat for Glen Canyon navigation. The two passengers occupied the limit of its space load, but with the Mexican Hat boats available for the transportation of food and gear, the foldboat served its role as purely a pleasure craft very well, and all the members of the expedition had the opportunity to ride in it during the 7-day river schedule.

Six miles downstream from Hite we pulled in for a landing at the 10-acre ranch developed by the veteran river man Bert Loper before his death in July, 1949. Loper had found a fertile bench which could be irrigated by gravity from the little stream in Red Canyon a mile away, and had erected a stone and mud cabin here. The place is accessible only by river, or by a very bad jeep road. It is one of those hide-aways which city folks dream about—where they could go and raise their own food and never have to worry about tax assessors and bill collectors.

This year the little ranch is being farmed by a Mormon boy, Elder Trone. He told us he had a very fine crop of corn and melons until some range cattle discovered the garden, and ate much of it. Next season there will be fences to keep the cattle out.

Since we had seven days in which to cover a distance of 149 miles, and a 4-mile-an-hour current to carry us along, we floated down-stream at a leisurely pace, seldom using the oars.

During that first afternoon we passed a conspicuous landmark known as Castle Butte — one of probably more than a hundred buttes with this same name in western United States. The hills and cliffs along much of our afternoon route were beautifully tinted with pink, gray, brown and a dozen shades of yellow. The coloring reminded me of Artist's Drive in Death Valley National Monument.

At sundown we pulled in to a sandbar opposite the mouth of Ticaboo Creek. Frank Wright, who was chief cook as well as skipper of the expedition, soon had a delicious steak dinner on the fire. This first night out

we could enjoy the luxury of fresh meat. The rest of the week we got our meat out of cans.

We had come 12 miles this first afternoon—just drifting along. It was hot in mid-day. The thermometer went up to 97 degrees. But the water was cool and there was no discomfort when one could sit on the deck of the boat and drag his bare feet in the stream.

Frank was kindling a driftwood fire for breakfast when I awakened the next morning at 5:30. By eight o'clock we had eaten our breakfast of coffee, cereal, bacon and eggs, and canned fruit and were ready to shove off.

Much of the second day's journey was through an area which had been the center of a gold rush in the late 1890s. Some one had discovered fine gold dust in the sand along the river—and several fortunes were spent installing machinery to recover the gold before it was proven that there wasn't enough of the yellow metal for profitable operation.

Some of the wreckage of the gold boom is still to be seen along the banks of the river. Late in the morning we passed a huge steel frame perched on a protruding rock above the river—the remains of what had been known as the Bennett wheel. A big water wheel had been installed to develop power for pumping water to a sluicing plant on the bench higher up. Many thousands of dollars had been spent on this installation a half century ago, but it was evident that very little gravel had ever gone over the sluiceway.

But while there was not sufficient gold to make this a paying operation, I found a rich field of cutting material here for the rockhounds. There were great chunks of agate and jasper in many shades, and fine specimens of black and white fossilized wood which had been worn by ages of streambed travel. Presumably this wood had come down from the Henry Mountains, and from the White Canyon deposits described by Harold Weight in the *Desert Magazine* of March, 1950.

I also found similar material on several of the sand and gravel bars along this sector of Glen Canyon. Since these specimens cannot be removed except by boat, it hardly is likely this mineral field ever will become entirely exhausted.

During the afternoon of this second day we stopped at the entrance to Moki Canyon. At high water it is possible for small boats to run some distance up in the tributary, to a lovely canyon vista where there is clear cool water. However, we found the en-

trance to Moki closed by a bar of quicksand—and that discouraged any further travel in that direction.

Our camp that night was on a bar at the mouth of Bullfrog tributary, and as on all the other nights we found it necessary to crawl inside our sleeping bags for warmth, despite mid-day temperatures of nearly 100 degrees.

On Sunday, our third day on the river, we reached Lake Canyon tributary at nine in the morning, and hiked a mile up along the little creek to some well-preserved Moki cliff dwellings in a great arched recess in the sandstone wall. The Indians abandoned their cliff homes here many hundreds of years ago, but one of the rooms remained in almost perfect state of preservation. It had been built with native stone laid in mud mortar, and the finger-prints of the Indian masons could still be seen in the dry mud.

After leaving Lake Canyon we rode for many hours between vertical walls of red sandstone, stopping on a sandbar for lunch. Occasionally, high up on a bench or ledge above the river we could see a cairn, probably put there during the gold rush days as a corner monument for a mining claim.

There are also a few of the old Brown-Stanton survey stakes still to be seen above the high water level. F. M. Brown in 1889 had undertaken to run a survey down through the canyons of the Colorado River to determine the feasibility of building a railroad to the west coast by this route. Brown's chief engineer was Robert Brewster Stanton, and when Brown was drowned after his boat capsized in upper Marble Canyon Stanton reorganized the expedition and completed the survey. In the end, it was agreed that the railroad in the canyon was not feasible.

Late in the afternoon of our third day we passed the mouth of Escalante River, one of the principal tributaries of the Glen Canyon sector of the Colorado. Passing this point I recalled a rugged experience two years ago when my wife and I undertook to run the Escalante River in rubber boats with Harry Aleson. The water was at such a low stage we spent most of the eight days hiking along the shallow channel and dragging the boats. (*Desert Magazine*, Sept. '50.)

Below the Escalante we stopped to replenish our water supply at Hole-in-the-Rock spring. This place was given its name when a wagon train of Mormon settlers in 1879-80 crossed the Colorado River here enroute to Bluff, Utah, to establish a colony. Several weeks' time were required to chisel a passageway through the rocks in order to get the wagons down to the river.

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Members of the expedition hiked up Lake Canyon a mile to this well preserved cliff house relic of the days when Moki Indians lived here.

A bronze plaque now marks the spot and many of the Glen Canyon river parties make an overnight stop at this place because of the fine spring.

We decided to push on, and at 7:30 passed the mouth of the San Juan River and made camp on a 40-acre sandbar deposited by this year's flood waters just below the junction of the San Juan with the Colorado.

At this point we reached a sector of Glen Canyon known to many hundreds of boat passengers who in recent years have been on one of the Mexican Hat expeditions with Norman Nevills, Harry Aleson, Wright and Rigg, and other boatmen who conduct excursions on the San Juan and thence through lower Glen Canyon to Lee's ferry.

On Monday, the 4th day of our journey, we awakened to find the San Juan pouring a stream of red fluid mud into the channel of the Colorado. The upper San Juan flows through the Painted Desert of northern Arizona, and storms in the upper basin bring down flood waters of various hues, according to the sector in which the rain-fall occurs.

Immediately below the San Juan junction are a series of side canyons of rare scenic beauty, and since they are easily accessible to river voyagers we made brief stops at all of them: At Hidden Passage where a narrow slot in the vertical side-wall leads back into a labyrinth of colorful passageways; at Music Hall, named by Powell in 1869 because of the acoustical qualities of the great domed amphitheater found here; at Twilight Canyon where the petroglyphs of prehistoric Indians are found on the side-wall of a rocky gorge which derives its name from the lack of sunlight beneath its overhanging walls; at Mystery Canyon where at high water a small boat may penetrate far back into the canyon along a narrow winding channel, with a delicious pool at the end.

This was a delightful day of side-trips. One is amazed at the beauty concealed in the recesses of those great walls which form Glen Canyon. Much of this area has not been fully explored, and it remains for future Colorado River adventurers who have unlimited time at their disposal to penetrate further into the labyrinth of

side canyons along the Colorado, and perhaps discover scenic vistas and ancient Indian ruins now unknown.

Our camp that night was on a sandbar at the mouth of Forbidden Canyon—at the river end of the six-mile trail which leads to Rainbow Natural Bridge. Nearly every river party remains here for a day in order to visit America's most spectacular natural arch of stone.

The trail follows the floor of Forbidden Canyon to its junction with Bridge Canyon, and thence to the Bridge. It is not a difficult route. I have been over it four times, and my advice to hikers is to ignore the horse-trail which climbs over the sandbanks at each bend in the canyon, and keep to the hard rock at the creek level. Hiking in fine sand is much more tiring than on rock—and the boatmen who serve as guides on this route often fail to point out this difference to their passengers.

Along the floor of the canyon leading to the Bridge are many pools of clear cool water—an ever present invitation to the hiker to stop for a refreshing dip.



A bar of quicksand closed the mouth of Moki Canyon. Tad Nichols and Bob Rigg are shown floundering in the treacherous sandbar.

It is possible to reach the top of Rainbow Bridge by following a rather precipitous route up the south wall of Bridge Canyon to a point above the arch, and then work down over a 50-foot vertical rock face where toe and finger holds have been chiseled in the stone. When a rope is available for added security, there is no hazard in this climb.

Beneath the great rock span is a book for the registration of visitors, kept here by the National Park Service. The bridge first was seen by a white party which included John Wetherill and Byron Cummings in August, 1909, and the number of visitors on record from that date until the day of our arrival there has been 7997. During the last seven years an average of 600 names have been added to the register annually.

On the sandbar at the mouth of Forbidden Canyon two other river parties were camped while we were there, both of them having come down the river in rubber boats of the World War II salvage type. One of the parties, with four of these boats, had fitted them with frames to carry outboard motors.

These river parties are typical of increasing numbers of persons who are making the Glen Canyon voyage each summer in all kinds of craft—rubber boats, foldboats, canoes, kayaks, rowboats of every type, and often with outboard motors.

With no rapids to run, the Glen Canyon trip offers a safe, pleasant, and inexpensive outing for people of all ages. Many Boy Scout troops have made the run in recent years.

A sandstorm of short duration gave us a gritty hour on the sandbar after we returned from our hike to Rainbow Bridge that evening. This was the only unpleasant bit of weather we encountered on the seven-day outing. The photographers in our party complained that they needed more clouds for good picture composition, and we did have light sprinkles of rain on two occasions. But most of the time we were floating down stream under clear skies.

We embarked at Forbidden Canyon on the sixth day of our trip at 7:30 in the morning. At eleven we reached Kane Creek where a landing was made for lunch. A mile downstream from here is Padre Creek where Father Escalante and the members of his party cut steps in the canyon sidewall in order to ford their horses and equipment across the stream during their historic trek in November, 1776.

Since Padre Creek often is closed to hiking due to quicksand at its mouth, river parties desiring to visit the old hand-hewn stone steps generally land at Kane Creek and walk

overland a mile and a half to the site. A majority of our party already had visited the Escalante steps, and so we did not make the overland journey on this occasion. Later we stopped at the mouth of Padre Creek and Boatman John Harper went into the side-canyon a short distance and brought back the report that the sand was too soft for hikers.

At 6:15 that evening our little flotilla pulled in at a great arched recess in the canyon wall known as Outlaw Cave. This is one of the favorite camping places for river parties, and the last overnight stop before reaching Lee's ferry. From here it is 17½ miles to the ferry.

The following morning we got an early start and before noon had landed at the sandbar below Lee's ferry where our journey ended. We were on sched-

ule, and friends were on the river bank to greet us. The welcoming crowd was larger than usually greets river expeditions at this point for the reason that the dedication of the Nevills plaque was scheduled to take place the following day, and old rivermen and friends of the Nevills had gathered from across the country to pay tribute to the memory of Norman and Doris.

No river journey to Lee's ferry is quite complete without a final reunion dinner served by the Art Greene family at Cliff Dwellers' Lodge, 10 miles from Navajo Bridge on the road to House Rock Valley.

After many years in the role of hosts at Marble Canyon Lodge and more recently at Cliff Dwellers', the Greenses have become as much an institution at this place as have the Vermillion Cliffs in whose shadow they dwell.

TRUE OR FALSE

Very few of us can travel the desert country as much as we would like, but that is no reason why our knowledge of the desert should become rusty. These quiz questions which appear each month in *Desert Magazine* serve as a sort of "refresher course" for those who like to keep in touch with the geography, the mineralogy, botany, history and lore of the arid Southwest. Twelve to 14 correct answers is a fair score; 15 to 17 is excellent; 18 or over is very superior. The answers are on page 25.

- 1—The bite of a Chuckawalla lizard sometimes proves fatal. True False
- 2—The atlatl was a tool used by the Papago Indians to harvest fruit of the Saguaro cactus. True False
- 3—Tuzigoot Ruins National Monument is in New Mexico. True False
- 4—Calcite is harder than rose quartz. True False
- 5—Visitors to the Petrified National Monument are permitted to pick up and carry away specimens not exceeding one pound in weight. True False
- 6—Pyramid Lake in Nevada derives its name from a pyramid-shaped rock near its shores. True False
- 7—Cochise was an Apache Indian chieftain. True False
- 8—The Mojave River of California is a tributary of the Colorado. True False
- 9—A line drawn east and west through Salt Lake City would pass north of Reno, Nevada. True False
- 10—The Virgin River flows through Zion National Park. True False
- 11—Shivwits is the name of an Indian tribe in New Mexico. True False
- 12—Joseph Smith, founder of the Mormon Church, never saw Utah. True False
- 13—The Wasatch Mountains may be seen from the Great Salt Lake. True False
- 14—The blossom of the Joshua Tree is red. True False
- 15—Winnemucca, Nevada, derived its name from a Navajo Indian chief. True False
- 16—*Tinajas* is a Spanish word commonly used in the Southwest meaning pack mule. True False
- 17—The mineral specimens known as Apache Tears are nodules of obsidian. True False
- 18—Death Valley Scotty was once a cowboy in Buffalo Bill's Wild West Show. True False
- 19—The beans of the mesquite tree were a staple item of food for desert Indians when white men first explored the Southwest. True False
- 20—Leader of the first expedition to seek the Seven Cities of Cibola was Marcos de Niza. True False

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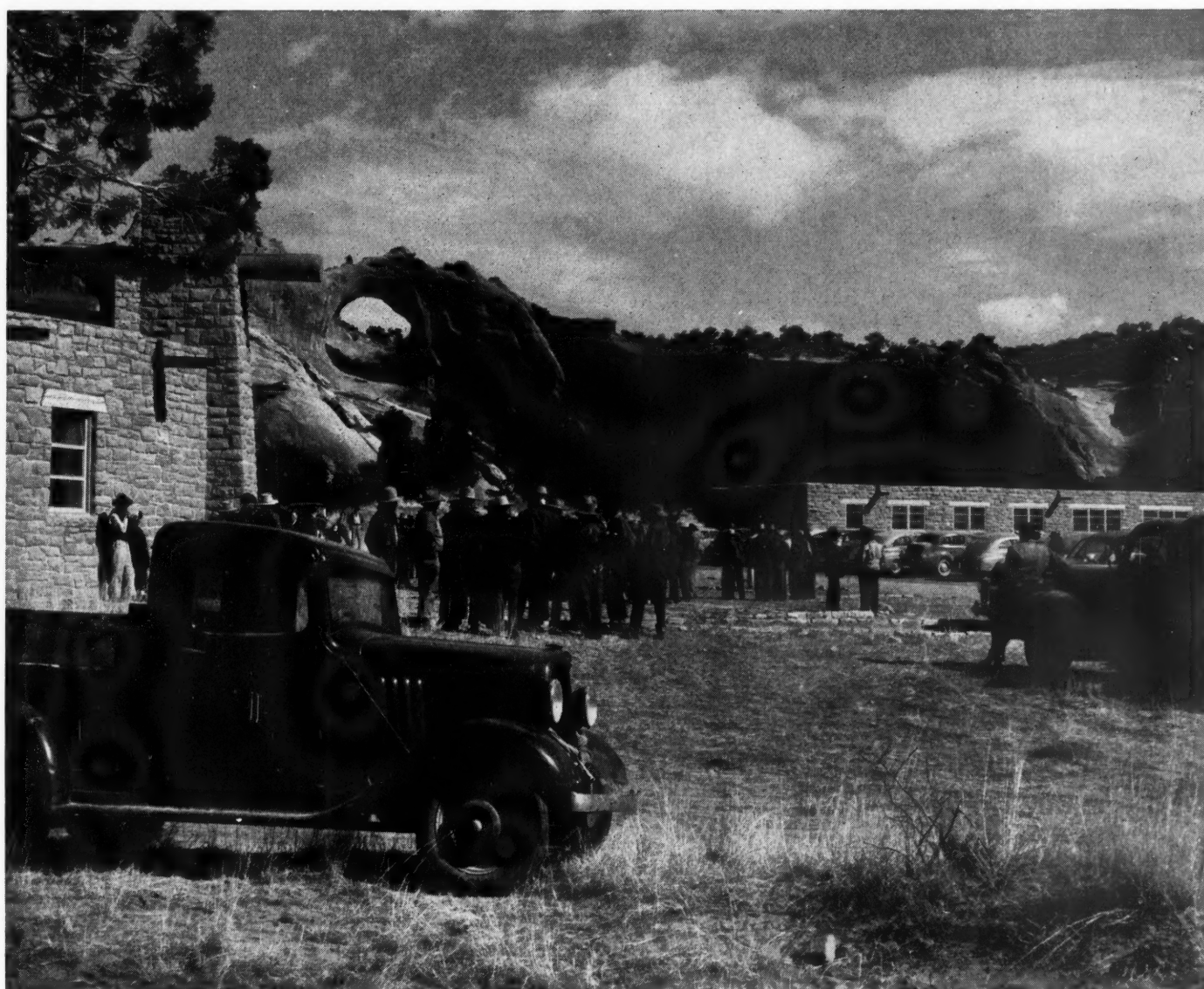
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Navajo Delegates gather for their Tribal Council meeting at Window Rock, Arizona. In addition to the 70-odd elected delegates the meetings are attended by many hundreds of tribesmen, some of whom travel long distances with team and wagon to be present. Photo by Milton Snow, U. S. Indian Service.

Tribal Meeting of the Navajo

By DOROTHY PILLSBURY

BUS AFTER bus rolled up in a cloud of dust to a big stone building in Window Rock, Arizona. The buses bore signs that seemed no part of the American scene — Chinle, Tohatchi, Lukachukai. Trucks roared in to disgorge men in overalls, bright pink and blue shirts and broad-brimmed black felt hats. Women in red and yellow velveteen basques flounced layers of petticoats over the sides. Horse-drawn white covered

wagons ground to a standstill. Men, women and children galloped up on sweating horses. Horns tooted, engines backfired, dogs barked. The most poignant expression of the democratic process in the country, the Navajo Tribal Council, was about to open an all-week session.

Sam Ahkeah, chairman of the Council, mounted the platform at one end of the big room, shaped like a Navajo hogan. As he did so, he tossed his big

black hat to one corner of the rostrum. Since many of the Navajo Indians cannot read, they hold elections by printing the pictures of the candidates on the ballots. But despite their illiteracy, the tribesmen on America's biggest Indian reservation are making amazing strides toward democratic management of their tribal affairs.

As the 70 duly elected delegates from the 16,000,000-acre Navajo domain trooped in, most of them tossed their hats to the same spot. It made a little mountain of sombreros.

Chairman Ahkeah stood on the platform gavel in hand. The delegates filled three long rows of front seats on the main floor in front of him. They were there because they had been duly elected by nearly 70,000 Navajos to



Navajos casting their ballots at one of the many polling places on the reservation. Since many of the tribesmen cannot read, the pictures of the candidates are printed on the ballots. Photo courtesy New Mexico Association of Indian Affairs.

represent them. Until last year the voting had been done by means of colored cards, as the majority of the tribesmen could not read. Now they voted by ballots—the most unique ballots ever cast in the United States. Each ballot carried a picture of the candidate to enlighten voters who could not read. At the same time the vast Navajo land was divided into well-defined precincts and all voters had to register.

Seventy-five percent of all eligible Navajo adults cast their ballots! Anyone who knows the vast distances, the lack of even small settlements and the maze of unimproved dirt roads on the reservation will recognize this as an astounding demonstration of the democratic process of government.

Some Navajos traveled 60 miles by horse-drawn wagon or on horseback to vote. Naturally, there were many complications. Mr. and Mrs. Low Wagon appeared bright and early on election day at the polling place of Pinyon in northeastern Arizona. They had traveled all night by covered wagon, the 30 miles from their hogan. But alas, they had registered in the precinct of Jeddito and therefore could not vote in Pinyon. Asked why they did not vote in the precinct where they registered, Low Wagon explained that his wife wanted to buy a few things in Pinyon and they had thought in the Navajo equivalent of "two birds with one stone."

Before it was time to open the meeting, Sam Ahkeah stood quietly watching the big room fill with delegates and

hundreds of constituents. Sam is a modern Navajo. His big brief case bulging with papers has made many a trip to Washington to plead the cause of his people. He knows his way around. But for all his white man's hair cut, business suit and fountain pen, Sam Ahkeah could never be taken for other than one of the "Dineh, The People" as the Navajos call themselves. For all his ability to lead and fight for his people, Sam has a smile as warm as desert sunshine. Even when his eyes are somber or flashing with indignation, they light up his strong bronze face.

The three rows of delegates represented every degree of adaptation by the Navajo to modern life. Some like Sam had short hair, wore business suits and carried brief cases. One aged tribesman had given the Indian touch to his white man's coat by cutting off the buttons and substituting large silver ones set with turquoise, made by a Navajo craftsman. Side by side were store shoes and moccasins, long locks confined by bright silk *bandas* and GI haircuts, pink mail-order house shirts and velveteen jackets. White haired oldsters seemed more bent with the weight of turquoise chains about their necks than with the years. Even Navajos in store suits wore gems of uncut turquoise in their ears.

Behind the delegates sat a thousand of their constituents. They had come from mountains stark against the sky, from canyons floored with quicksands and from pinyon covered mesa tops. They had come here, not only because

the Navajos are the greatest visitors among the Southwest Indians, but because they are a people eternally in some kind of dramatic distress—flash floods, parched or eroded fields, dry water holes and winter blizzards with starvation ever gibbering behind the red rock pinnacles of their gorgeous but unproductive domain.

Women looked like dolls in layers of full-gathered long skirts topped by bright velvet basques with heavy shawls about their shoulders. Their turquoise and silver ornaments would have stocked half of the curio stores of the region. Unhappily, a lot of it would have to be returned to the "Hard Goods Pole" of the traders as soon as the session was over, there to hang in pawn for sacks of flour and cans of lard. But pawn or no pawn, the women listened bright-eyed to all the long discussions. When sheep, wool and blankets came up for attention, they swished up the aisles in their long full skirts, and in no uncertain language told their men folks how to vote in that phase of Navajo life which belongs particularly to the women.

Children, miniature duplicates of their parents, sat quietly for long hours or slept on hard benches. Never once in the long sessions did a youngster howl or whimper. Never once was a child berated and jerked about by an exasperated mother. Big-eyed babies on cradle-boards were passed up and down the rows in dull moments and seemed to have a reviving effect on the entire assembly.

For a full week in morning, afternoon and some evening sessions the discussions continued. It kept two interpreters busy putting English eloquence into Navajo and Navajo oratory into English. The problems were as modern as today—uranium, airplane fields, oil and mineral rights and the old, old ones of sheep, water, schools and what to use for money.

Robert's Rules of Order are no mystery to Navajo delegates or to their chairman. Sometimes several delegates were on their feet at the same time. They waited patiently to be recognized by the chair. When motions flew about to the confusion of everyone, an old Navajo jumped to his feet and announced, "too many motions before the House." But always the talk came back to schools for their children. Even at this writing, it is estimated that 15,000 children of school age are receiving no more education than chipmunks. Of those who are sent off the reservation to Indian boarding schools, some have been shipped as far away as Oregon.

On the last day of the session, representatives of the Indian Bureau took the floor, some from far away Wash-

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ington. They looked strangely pallid in the midst of this earth group. The officials talked expansively of what might be done to better the condition of the tribesmen. Mineral and oil development, irrigation, soil conservation, possible industries! It sounded fine and impressive. It went on and on. Delegates and constituents snoozed and took a much needed rest.

Finally a little delegate in faded blue overalls and a moth-eaten jacket jumped to his feet. Beneath a mangey Kit Carson fur cap, his grey locks fell to his shoulders. "Mr. Chairman," he urged, "I move that all this big talk go on the table. Let's talk schools all the time we have left. What good is anything unless we are educated?" His brown moccasins executed a few steps of a war dance before he sat down to the roaring laughter of the tribesmen. Among the other Indians, the Navajos are noted for their wit. It was they who dubbed the little man of the Third Reich in the last war, "Smells His Mustache" and his companion across the Alps, "Gourd Face." Wherever the Navajos go visiting ceremonial dances in the Rio Grande pueblos, gales of laughter follow their passing.

Between sessions the tribesmen gathered in little groups, even as their white brothers do, to talk over what had happened and to discuss forthcoming issues. Window Rock, the Navajo capital, is located near the New Mexico-Arizona line in the midst of strangely eroded outcroppings of creamish pink and light tan limestone in rolling hills tufted with dwarf pinyon and cedar trees.

Here the Indian Bureau has its Navajo Service executive offices in sprawling one-story buildings strung together with a maze of corridors. Within, radiators sizzle with steam heat, hot water hisses into capacious bath tubs and dining room and kitchens twinkle with electrical gadgets. Without, Navajos camp in the lee of covered wagons and trucks, build their fragrant cedar fires and pass around the big, smoke-blackened coffee pot and the frying pan filled with squaw bread.

The elected delegates with their wives were served their meals in the dining room of the building used by the employes of the Indian Bureau. Each noon I noticed a handsome middle-aged Navajo woman sitting in a big chair waiting for the summons to dinner. Her turquoise and silver jewelry indicated she was the wife of a well-to-do delegate. Although the sky was without a cloud, she held across her lap a big old fashioned cotton umbrella. Any one who knows anything about Indians knows that it is not the thing to dash up and start



Sam Ahkeah, chairman of the Navajo Tribal Council. Photo by Milton Snow, U. S. Indian Service.

talking—that is, if there is a story in prospect. I waited. The Navajo woman waited.

On the third day she took a chair next to me and plunged into the story I knew she had been wanting to tell me. "I want to tell you the terrible thing that happen to my boy. I have four boys, but one is a lot smarter than all the others. He want to learn to be doctor or lawyer and help his people. He study hard and get through Indian day school. Then we send him to Indian boarding school in Albuquerque for high school so he can go to university and learn to be doctor or lawyer and help his people."

The Navajo woman sighed and clutched her big umbrella for support. "After awhile we get letter from him and we see he is not happy. It got worse and worse. At last his papa and I took our horses and wagon and went to Albuquerque. It took a long

time. The school was nice and everyone was nice. At last we found out what was the trouble. At that time the Indian school in Albuquerque and the one in Santa Fe had no credits with the university either in Arizona or New Mexico. He couldn't get in without taking examinations and he was sure he couldn't pass them."

"What did you do," I asked wondering if the Tribal Council had been forced to call an emergency meeting.

"We took him home and got him in a high school run by missionaries. It had the credit to the university. But first they give him examination and put him back two years. My boy felt so bad, I thought he would never come out of it. But he did. Now he is in university and soon will be lawyer. And now both those Indian high schools in New Mexico have credits to the university. So everything is fine." With that she picked up her

cotton umbrella and swished her voluminous petticoats into the dining room.

"The People" have stamina, we were finding out. Neither are they a vanishing tribe, but are increasing at the rate of some 1000 a year. They are the most aggressive of all the Southwest Indians. With one hand they hold fast to a pride in their ancient ways. With the other they are reaching out for tractors and machinery and all the rights of their American citizenship.

I had come to the Tribal Council thinking of the poverty, the illiteracy and the isolation of the Navajos. I left with a strange reversal of feeling. "The People" have something. They have a heritage of song and poetry, of skills and crafts. They have humor and above all they have something that approaches New England spunk.

We were to see another example of their stamina on the way home. On the long lonely road from Window Rock that leads to Gallup, we saw an old Navajo hobbling along on crutches. One foot was so wrapped in bandages it was about the size of a ham. As there were no settlements or even visible hogans for miles around, we wondered where he was going.

We stopped. He understood no English and could speak but a few words. But he understood our motions that we would give him a lift. Where he was headed on crutches we could not imagine. Smiling broadly, he rode mile after mile. At last he began waving his arms and pointed to a thread of a trail that wound between the bushes to a barely discernible hogan at least a quarter of a mile away. Some

way he managed to get out of the car. Propped on his crutches, he spoke the first connected English words that had come from him. "You make me too happy," he beamed.

"Would he have walked all those miles we had brought him," someone in the car wanted to know, "on crutches!"

He would. That is the way most Navajos are walking ahead today—on crutches of one kind or another.

CACTUS EASY TO GROW —IF YOU FOLLOW RULES

If your cactus dish garden is dying in a green room—that's why. Cacti are repelled by the color green.

If you move a desert cactus to your own yard and fail to keep it turned in the same direction it grew on the desert, the plant will die because you have upset its metabolism. Cactus has a cooler body temperature on the side away from the sun.

These are two of the suggestions offered by a group of cactus collectors who meet monthly at the Arizona Botanical Gardens. The club was formed for the purpose of learning how to identify and care for cactus—and for club members to have an opportunity to trade species and enlarge their garden collections.

Most of the gardeners are agreed that the main consideration for successful planting is good drainage. Sand, gravel and silt make good soil for the garden. Also, all warn against over-watering plants. Too much water is as deadly to a cactus as too little.—*Arizona Republic.*

Hard Rock Shorty

of Death Valley



While their broken fan belt was being replaced by the mechanic at the Inferno garage, the two dudes who were touring Death Valley wandered into the general store where Hard Rock Shorty was on temporary duty as clerk.

The strangers asked many questions, and finally Shorty began to ask a few himself. He learned that the visitors were installing a radar station for the navy out somewhere on the desert.

"Radar!" exclaimed Hard Rock. "I been readin' about that. If I understand it right, you use some kind uva gadget to send out sound waves, an' when they hit some object an' bounce back it makes a picture on a screen uf some kind."

The visitors laughed.

"It's something like that," one of them remarked.

"Well, we got a pretty good radar out here already," Hard Rock went on. "Only we call it Echo Mountain."

"On account o' this Echo Mountain ol' Pisgah Bill don't need no alarm clock to git him up when he's out working at his lead mine. Works like this:

"Jes before Bill goes to bed at night he points his nose toward that Echo peak an' shouts, 'Time to git up!'

"That mountain is about 50 miles away, and sure enough, eight hours later, jes as the sun is comin' over the Funeral mountains that echo comes back jes as plain as Bill said it: 'Time to git up!'"

Plan Pegleg Trek in October . . .

Two important changes are to be made this year in holding the 6th annual Pegleg Smith Gold Trek and Liar's Contest in Borrego Valley, California, according to the announcement of Ray Hetherington, the original sponsor of the program.

1—The dates have been changed from New Year's Eve and January 1 to Saturday, October 11 and Sunday, October 12. The Liar's Contest will be Saturday night.

2—The place has been changed from the Pegleg Monument in Borrego Valley to a new location in a natural amphitheater near Borrego's Desert Club.

Directors recently named to sponsor this year's Pegleg program in addition to President Hetherington of the Ghost Town in Knott's Berry Farm are: Howard D. Clark of Buena Park, secretary, Fred Harvey of Encinitas, Ralph L. Caine of Los Angeles, and David Olmsted of the Road to Romance association at Long Beach.

While the Pegleg Trek and Liar's Contest are open to all visitors, a special invitation is being sent out to the Rockhounds this year, inviting them to come and add their specimens to a mineral display in the Desert Club.

There will be ample space for the many campers who usually attend the annual Pegleg Trek, and who look forward to this event as an annual reunion of the desert prospectors.

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The Kirk children and their pet Death Valley burros. Four-year-old Sara hugs Melinda, while brother Billy, seven, kneels beside Pedro.

Death Valley Playmates . . .

By PAT STURTEVANT

WHAT HAPPENS to baby burros when their parents are shot by "sportsmen" invading the desert in search of thrills?

Four-year-old Sara René Kirk and her brother Billy, 7, of Homewood Canyon, 35 miles south of Death Valley and 5 miles north of Trona, California, have provided an answer for at least two such orphaned burros and find them lovable, loyal pets.

The children became foster parents for the first time last fall when they came upon a small thin burro braying disconsolately beside the body of its mother. Together they struggled to carry the animal home and anxiously bottle-fed it a typical baby's formula (Karo syrup and canned milk) for weeks till it fattened and thrived. But the burro seemed lonely for four-legged companionship.

This problem was solved a month

later, when Billy found a half-starved black burro in the hills above his home. Now Melinda, their curly gray pet, and Pedro, the newcomer, frolic together near the Kirks' home and follow their two-legged "parents" around like dogs.

"The children have taken complete care of Melinda and Pedro since they first found them," their mother, Mrs. E. W. Kirk, said. "They're such lov-

able animals I can't understand why hunters kill them."

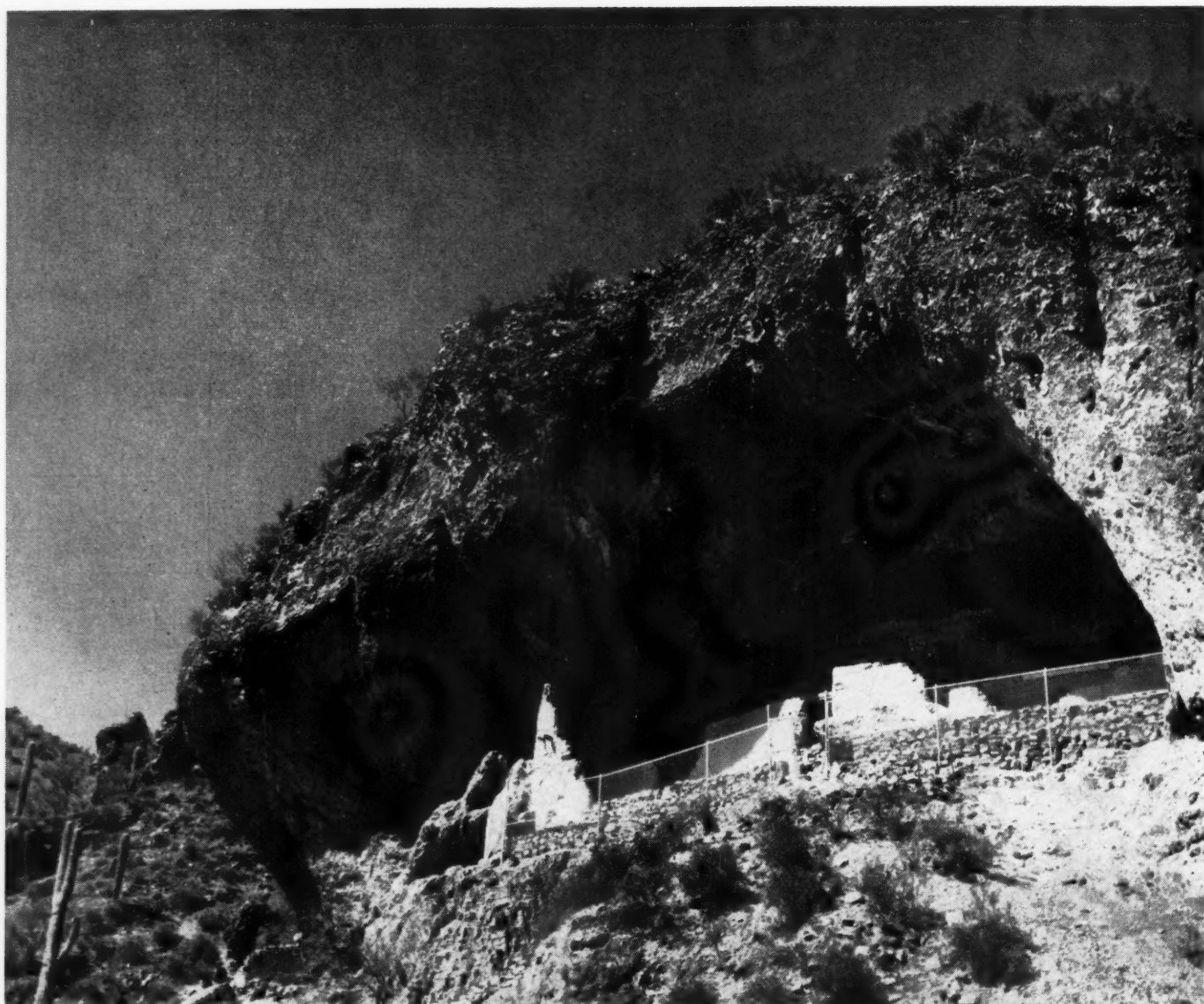
The burros present no special problem to the Kirks, who came from Washington two years ago in search of a healthful climate for Billy. On occasion, however, the family has returned to its home to find both Melinda and Pedro peacefully standing in the kitchen, having entered through an unlatched door.

For many years conservationists and wildlife lovers have fought to protect the wild burros which roam in the Death Valley National Monument and over other remote desert hill areas. Many of the hardy little animals have been killed because they allegedly interfere with mountain sheep, eating the limited forage on which the bighorns depend and driving the sheep from water holes.

Present laws protecting the

burros are effective only if the killers are caught in the act of transporting a carcass for food purposes and were designed to stop wholesale slaughter of the harmless animals for dog food.

Several groups in past years have urged that the burro be legally classified as a game animal and protected by game laws. It is hoped that a refuge for burros will be established in the near future.



The Tonto Ruins, built by the Salado Tribe of Indians in the Fourteenth Century, occupy a natural arched cave in the cliff, 330 feet above the canyon floor.

Cliff Home of the Ancients

After a Rip Van Winkle sleep of 500 years, the Tonto Cliff Ruins of Arizona have come back to life. Weldon and Phyllis Heald weren't prepared for all the surprises they met when they visited the national monument this spring. The former stepchild of the park service was spic and span; a nature trail identified typical desert flora, and artifacts were neatly displayed in a small museum beside the paved parking area. In this story, Weldon tells how Tonto Superintendent Charles Sharp and Park Archeologist Lloyd Pierson have restored the ancient dwellings of a forgotten Salado tribe.

By WELDON F. HEALD
Photographs by the Author
Map by Norton Allen

WE AREN'T crowded yet in southeastern Arizona. Our neighborhood stretches in all directions to the distant horizon, and we have good friends scattered over an area the size of Ohio. We don't see some of them as often as we would

like, but our efficient desert grapevine keeps us informed of their doings. Within 24 hours we know when somebody has a baby, that So-and-so's mother-in-law is on a visit from the East, or that a fellow rancher 50 miles 'round the other side of the mesa got

a record price for his cattle. In fact, you'd be surprised how our vast open spaces hum with human activity.

Two of our neighbors, a few hundred miles up the road, are Charles and Frances Sharp. Charles was formerly a Park Service ranger next door at Chiricahua National Monument, but was promoted in 1947 to superintendent of Tonto Cliff Dwellings. Phyllis and I hadn't seen the Sharps for a year and a half, so we dropped in for a neighborly call this spring on our way to Phoenix over the Apache Trail.

The monument had changed much since we last saw it. Park Service Archeologist Lloyd Pierson greeted us.

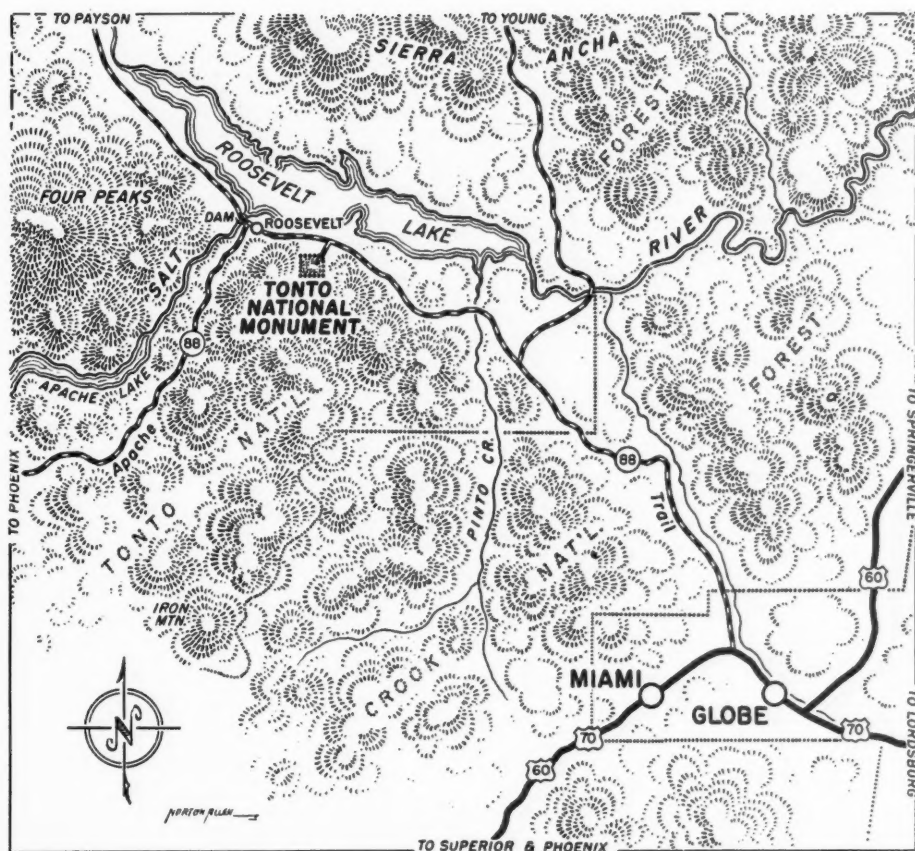
"How did you do it?" I said, indicating the newly-paved parking area outlined with cement curbs and the

spic and span museum. "I'll bet there hasn't been so much activity around here since the Indians left."

"We have been kind of busy," said Lloyd modestly.

It was one of those sweeping understatement typical of Arizonans. To us, it seemed as if life and vitality had returned once more to these cliff dwellings after a Rip Van Winkle sleep of 500 years. At last, we thought, Tonto is getting the Park Service polish and can take its rightful place on an equal footing with the state's other 15 national monuments.

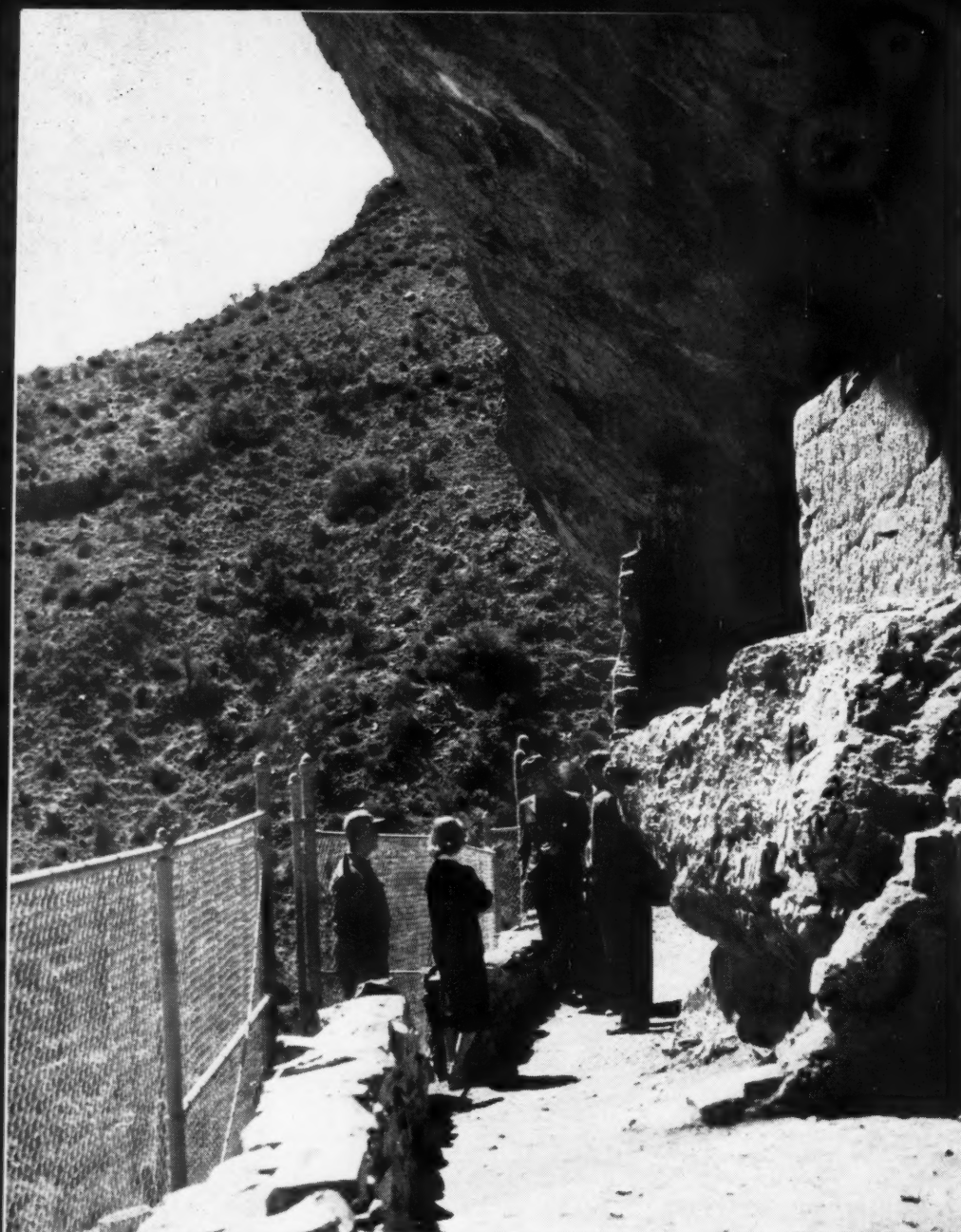
That is good news. For too long a time Tonto was a stepchild nobody wanted, a prey to vandalism and neglect. In 1907, President Theodore Roosevelt set aside 1120 acres to protect these easily-accessible and interesting prehistoric cliff dwellings. But for more than 20 years Tonto was a national monument on paper only, and vandals knocked down walls, burned beams, carved their initials, excavated and carried away artifacts. Nominally under the jurisdiction of the Forest Service, the monument was partially developed under a special use permit



Park Service Archeologist Pierson and Superintendent Sharp puzzle out how to put together a fine Tonto polychrome pot dug up in the cliff dwellings.



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More than 18,000 people from all over the country visited the Tonto Cliff Dwellings last year. Every one of them was met and guided through the ruin by Superintendent Sharp and his two helpers.

by the Southern Pacific Railroad in the late 1920s as a tourist attraction on the Apache Trail detour. This afforded some degree of protection, but unfortunately much of the damage had already been done. The Southern Pacific built an access road, a trail to the lower ruin, a chain link fence across the front of the cave and installed an Apache Indian caretaker and guide. But it wasn't until 1933 that Tonto finally was taken over by the National Park Service, and only recently have appropriations been sufficient for the hard-working team of Sharp and Pierson to put the monument in tiptop condition.

"Where's Charles?" I asked as we got out of the car.

"Oh, he's driving the last stakes on the new nature trail," said Lloyd. "We just finished the job this morning, and you two can be the first to try it out."

He handed us a mimeographed leaflet describing 21 objects of interest indicated by numbered stakes along the trail. "We'll have this printed when we get the bugs out of it. Let us know what you think of the job."

The lower cliff dwellings can be seen perched in a natural arched cave in the quartzite bluff, 330 feet above monument headquarters. The trail switchbacks up the canyon wall to the ruin through a fascinating garden of desert flora. Tonto's elevation puts it in the Lower Sonoran life zone, with an Upper Sonoran shrub here and there.

We wound up the trail in the brilliant morning sun, the sharp, aromatic tang of the desert in our nostrils. Spring wildflowers were in bloom, and the songs of canyon wrens cascaded down from the cliffs above. To the east we looked out across broad Salt

River Valley to the bold lofty outline of the Sierra Ancha.

The stakes drew our attention to palo verde, staghorn and teddy bear cholla, tall saguaros, spiny fishhook, hedgehog and fat barrel cactus, ocotillo, crucifixion thorn and mesquite. There were geological points of interest too, and even long white honeycombs in a crevice of the cliffs, around which swarms of bees were buzzing. We stopped and read the descriptions and would have missed several things without the stakes and leaflet. So the first visitors to walk Tonto's nature trail approved thoroughly; but I must admit one of the markers we liked best was a neat sign which read:

*"Let no man say, and say it to your shame,
That all was beauty here until you came."*

At the 21st marker we met Superintendent Sharp. As we shook hands and complimented him on the many improvements at Tonto, a quiet pride shone in his eyes. They are deep, calm, grey eyes which often seem to rest on distant things, as if they were contemplating another world beyond the horizon.

A product of Nebraska, Charles was graduated from Nebraska Wesleyan as a geography major. He has been with the Park Service 11 years.

"I started as a roving ranger," he will tell you. "There's no such thing now, but while it lasted it was the best job in the service for a young fellow, if," he smiled, "he had an adaptable wife. Fortunately, I have. Frances and I lived in a house trailer pulled by a government pickup truck and were ready to move on short notice to any of the Southwestern national monuments. I was relief ranger at White Sands, Montezuma Castle, Bandelier, Tonto, Saguaro and Casa Grande. Believe me, it was an education. I not only learned about the Park Service, but came out of it a carpenter, plumber and mechanic." After this introduction, Charles was stationed at Carlsbad Caverns and Chiricahua National Monument between 1941 and 1947.

The three of us walked on up to the cliff dwelling. We were silent as we came to the cave, with its ancient masonry and fire-blackened walls. Here was once the busy settlement of a people now lost among the dim pages of prehistory.

The Indians who built these eagle-nest communities high in the cliffs were not too different from the present-day Hopis or Zuñis. Archeologists call them the Salado people, which is the Spanish word for "salty." They apparently emigrated from the north about 1200 A.D. and settled along

the Salt River. They built villages and cultivated maize, beans, squash and cotton. In fact, before Roosevelt Dam flooded the valley, remains of Salado irrigation ditches could plainly be seen.

But along in the early 1300s something happened. Probably enemies swarmed down into the peaceful land and drove the Salados into defensive communities in the surrounding hills. At any rate, for almost a century they occupied their cliff dwellings and continued to farm along the river below. But around 1400 A.D. they suddenly abandoned the region. No one knows why or where they went. The best guess is that the country was invaded by modern Yavapais from the northwest or Apaches from the east, and the Salados were forced to retreat.

The main cliff dwelling, 85 feet long and 40 feet deep, originally was two stories high and contained about 25 rooms. The walls are of rough stone, cemented with adobe clay in which the finger marks of the builders are still visible. Much of the dwelling has crumbled to dust, but one room remains roofed over with saguaro ribs, topped by four or five inches of adobe and supported by the original beams and posts, cut and shaped by stone axes. After 500 years, there still are evidences of the former red-skinned occupants: perfectly-preserved corn cobs, seeds and the bones of wild animals can be seen. The skeleton of a child has been excavated in the floor of one of the rooms and now is protected under glass in a museum case.

But life in a cliff dwelling was apparently no existence for the faint-hearted or weak-backed. The nearest water supply was a seep or spring in the canyon a half mile distant; the valley farmlands were two to four miles away and 1000 feet below. Water, firewood, harvested crops and wild game all had to be carried Indian-back up to the dwellings. Furthermore, these ancient apartment houses were more crowded than the worst modern tenement—five to ten Indians eating and sleeping together in dark, smoky, windowless rooms little bigger than closets.

Nevertheless the Salados were obviously an industrious hard-working people with a high level of culture. They made excellent decorative and plain pottery and wove fine cotton textiles, embroidery, open work and diamond twills. Their dwellings have yielded sandals, mats and ropes of yucca fiber, shell and turquoise ornaments, bows and arrows and stone implements, which give a revealing cross section of the daily lives and habits of the extinct Salados.

Due to the enthusiastic labors of Lloyd Pierson, many of these artifacts



Marian and Lloyd Pierson, Park Service archeologist at Tonto, with Dale Fred Pierson, probably the first baby born in the area in 500 years.

now are preserved at the museum beside the parking area. Lloyd came to Tonto in 1948 as park archeologist, and I found him on my last visit with hammer in hand and nails in teeth, busily building exhibit cases. Today, the neat little museum has a model display room and a small but growing library of Southwestern archeological literature. Lloyd pointed out the site for a future larger museum which will be built when—and if—sufficient appropriations come through.

There are several other cliff dwellings within the monument. The so-called Upper Ruin, largest of all, contains 32 rooms. But there is no trail, and the walls are in a rather dangerous state of deterioration, so the Park Service discourages all visitors except serious archeological students. When time and funds can be found this fine ruin undoubtedly will be stabilized and opened to the public. Another 14-room dwelling, adjacent to the lower ruin, Lloyd excavated last year with a crew of four men—and Mrs. Pierson.

"In fact, it was Marian who discovered 'Little Louie'," said Lloyd.

"Little Louie" was one of the most remarkable finds at Tonto. One day Lloyd and Marian saw the corner of a bear grass mat sticking out of the ground.

"You dig it up," said Lloyd, "while I look over those upper rooms."

So Marian started digging gopher-fashion around the mat. She pulled it out, but that wasn't all. Underneath

was a cradle board, then two baskets, under that a gourd pot and finally, a foot and a half below the surface, she found the skeleton of a child surrounded with food, a hat, spindle stick, yucca bow and arrows and a rattle. "Little Louie," with all the paraphernalia for his premature trip to the Happy Hunting Grounds, now lies in state at the museum—one of Tonto's most prized possessions.

We lunched at the picnic grounds under a spreading mesquite and visited, as country neighbors will, with the Sharps and Piersons. Meanwhile Ranger Bob Vrickland played Park Service host to the continually arriving visitors whose cars bore license plates from New York to California. Last year 18,460 people registered at Tonto, and this year they have been coming at the rate of 3000 a month—about twice as many as when Superintendent Sharp took over the monument.

Although open all year, Tonto is hot in summer, and the best season is from late October until mid-June. It can be reached in three hours' drive over Arizona's famed Apache Trail from Apache Junction to the west, or in an hour from Globe to the south. You can get gasoline, meals and limited supplies at the little town of Roosevelt, 3½ miles distant, and there is a motel. No camping is permitted in the monument, but there are several fair spots near Roosevelt Dam by the shores of Roosevelt Lake.

Mines and Mining

Window Rock, Arizona . . .

The Navajo Tribal Council has voted to enter the mining business as a tribal enterprise. The resolution empowered the tribe to acquire its own mining or oil drilling properties and to produce its own minerals, supplanting the present setup whereby private companies lease tribal land and pay royalties on their production. What the tribe actually does will depend largely on results of surveys now being conducted on the New Mexico-Arizona reservation. At the present time, Vanadium Corporation of America is doing the bulk of the uranium mining on the reservation. Some teams from the Atomic Energy Commission itself also are working on the Navajo lands. —*Arizona Republic*.

Washington, D. C. . . .

In a report to Congress, Secretary of Interior Oscar L. Chapman visualized a vast synthetic oil industry which he said would return a handsome profit and boost the nation's oil reserves by "many billions of barrels." He urged private industry to develop as soon as possible commercial plants for transforming oil shale and coal into gasoline and other synthetic fuels. —*Vernal Express*.

Santa Fe, New Mexico . . .

Eighteen miles south and west of Santa Fe, in a section known as Los Cerrillos—the Little Hills—zinc and lead are causing new activity in the oldest mining area of the state. Two mines—the Tom Payne owned by Santa Fe Lead Mines and the Pennsylvania mine—are producing ore with a content of approximately 16 percent lead and 25 percent zinc. Expansion is planned this winter. Los Cerrillos long has hummed with mining activity. The fabulous Mina del Tiro, a silver-lead mine known to the Spaniards prior to the Pueblo revolt of 1680, is there, and the famous Chalchihuitl turquoise mine of the Indians lies nearby. —*Humboldt Star*.

Barstow, California . . .

Lighthouse Mining Corporation of Barstow has announced it will buy scheelite-bearing ores or mill such ores on a custom basis at its Mojave river bed plant. Machinery consists of primary and secondary jaw crushers, screens, ball mill, cone classifiers and tables. The mill has a capacity of about 80 tons per 24 hours. —*Humboldt Star*.

Carlsbad, New Mexico . . .

The 100,000th carload of potash was shipped this summer from International Minerals and Chemical Corporation's mines at Carlsbad. International Minerals produces approximately one-fourth of the total domestic output of potash salts.

Moab, Utah . . .

Development and production of uranium mines in the Moab area are endangered by an amendment to the federal leasing act, passed in 1946 but kept secret until now. The amendment reserves to the United States government all fissionable materials found in land covered by oil and gas leases. This casts a shadow over many lode claims. Unless Congress passes remedial legislation to nullify or modify the amendment, hundreds of miners and prospectors and several large companies stand to lose vast sums of money already invested in development of their claims. —*Moab Times-Independent*.

Virginia City, Nevada . . .

Three former gold mills now are running on tungsten ore on the historic silver and gold Comstock Lode. The Consolidated Virginia and Dayton Consolidated plants have been treating scheelite several months, and the Recovery mill at Silver City has been changed to a tungsten concentrator to handle scheelite from the Brunswick Canyon Mine.

Beowawe, Nevada . . .

Discovery of deposit of commercial sulphur near Beowawe has been announced by Oscar J. Streeter and Pete Peterson of Elko. The deposit is believed to contain 100,000 tons of the mineral. About 400 tons of sulphur have been uncovered to date. —*Battle Mountain Scout*.

Searchlight, Nevada . . .

Searchlight, once one of Nevada's important gold and silver centers, may enjoy another boom through discovery of uranium. John E. Loring of Las Vegas and a scientist friend from the east recently explored the area with geiger counters, and in Searchlight proper the instrument reacted violently, indicating that the area was highly radioactive. The Canadian Radium and Uranium Corp. of New York has been awarded exploration rights. —*Las Vegas Review-Journal*.

Hillsdale, Arizona . . .

The tungsten unit at Hillsdale Mining and Milling Company's mill is reported near completion. The unit, a conventional gravity plant of 300 tons capacity, will be used to treat both company and custom ores. The gravity section includes crushing and grinding equipment with concentration by flotation, tabling and magnetic separation. Principal production will come from the Tungstona and Black Pearl mines. —*Mining Record*.

Winnemucca, Nevada . . .

The Riley Mine, 42 miles northeast of Winnemucca, has been reopened by the United States Vanadium Corporation and is again a producer of tungsten. The ore will be hauled two miles to the mill of Getchell Mines, Inc., for preliminary milling, and concentrates will be shipped to the U.S.V. plant at Bishop, California, for processing. —*Humboldt Star*.

Tonopah, Nevada . . .

The Last Chance Mining Company, which conducts the only antimony operation of its kind in the state, recently completed its smelter. It employs an electrolytic method of treatment which was developed by the U. S. Bureau of Mines. Operations are located southwest of Round Mountain in the Wall Canyon district. —*Goldfield News*.

Austin, Nevada . . .

Recalling the days when Austin was a famous silver producer, the Castle Mountain Mine will begin large scale production as soon as preliminary construction work is completed. A mill to be operated on the property will handle custom work for small mines throughout the Austin area insofar as custom contracts do not interfere with the regular output of the Castle Mountain mine. The drift to the old mine shaft has been completed, and workmen now are stoping and hauling to the mill. —*Reese River Reveille*.

Virginia City, Nevada . . .

The last stamp mill to operate for the recovery of precious metals in Virginia City has resumed processing gold. The 10 stamp mill owned by Earl and Abe Evans commenced operations in August. If worked on a 24-hour basis, the mill will have a daily capacity of between 12 and 15 tons. A backlog of ore from the Evanses' Bold Eagle Claim near the southern slope of Cedar Hill has been trucked in for processing. —*Territorial Enterprise*.

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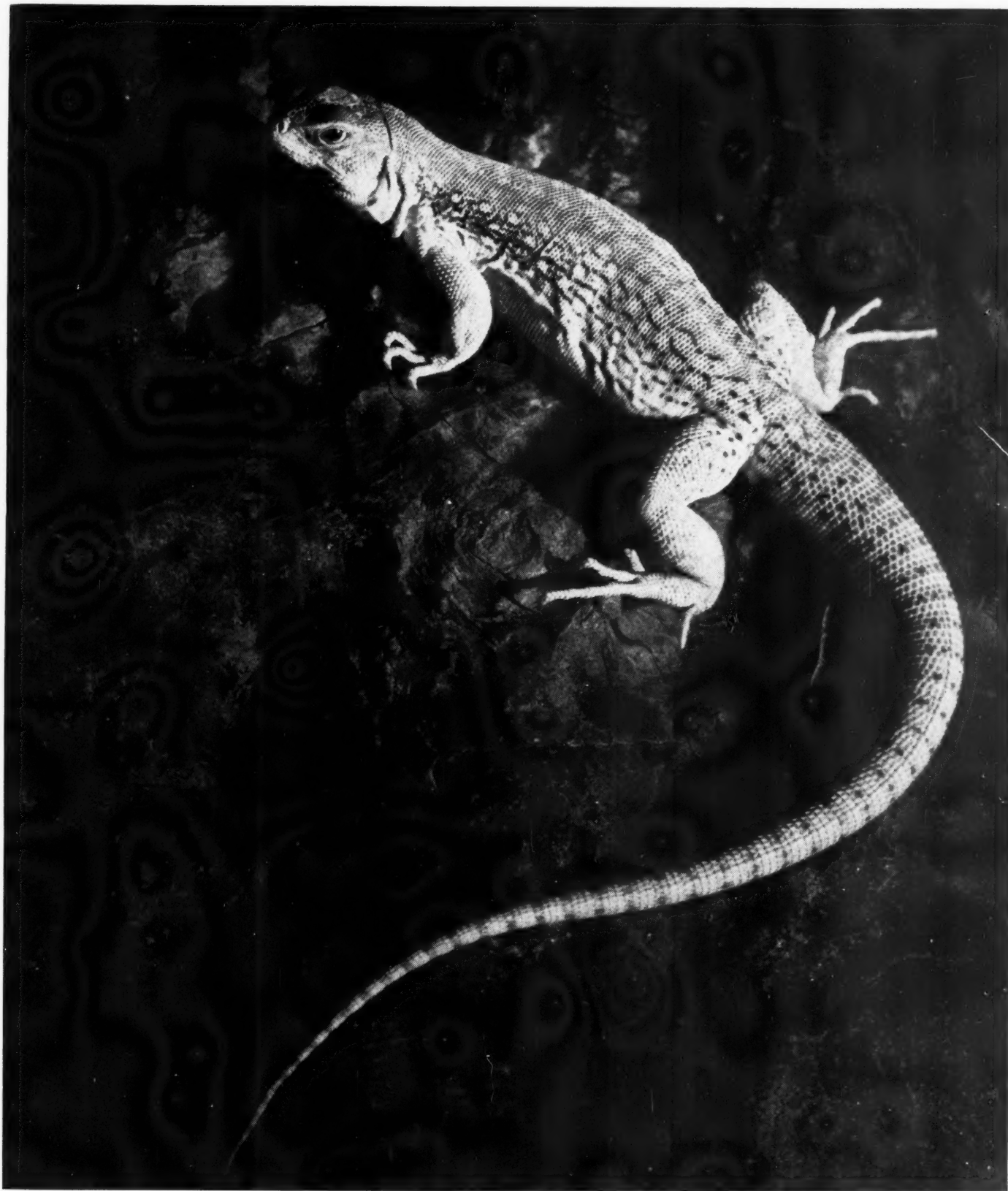
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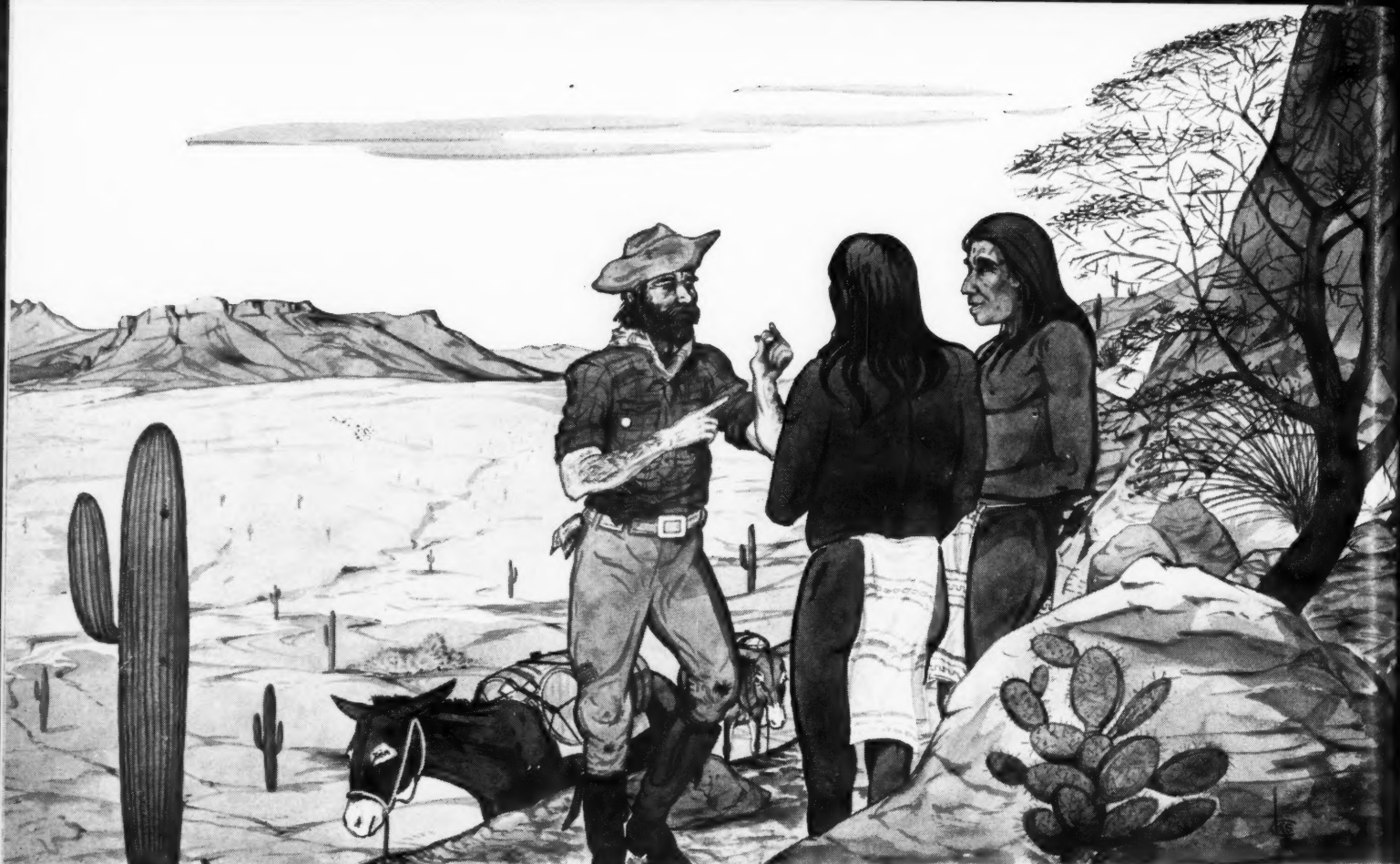
AZINE



Picture of The Month

Painted Canyon Lizard . . .

On an April trip through Painted Canyon east of Mecca, California, Robert Leatherman of San Bernardino saw a beautiful white crested lizard basking in the sun. With his Crown Graphic camera set for 1/25 second at f16, Leatherman took this study, first prize winner in the August photo contest. Second prize was won by Alice Puster, whose picture of gnarled Joshua tree limbs appears on the poetry page.



Hoping to rediscover the lost gold ledge for himself, the prospector held up a piece of the rich ore and advised the Indians: "It is no good. Throw it away."

Lost Pima Indian Gold . . .

By JOHN D. MITCHELL
Sketch by Charles Keetsie Shirley
Navajo artist

MANY YEARS ago, a party of eastern bear hunters engaged a group of young Pima Indians to guide them into the Mt. Ord country 50 miles northeast of Phoenix, Arizona.

The easterners planned to spend several weeks hunting in the area, and when the Indian guides had seen them comfortably established in the wilderness camp, they started back to the reservation. To shorten the distance home, they traveled in a straight line from the southern base of Mt. Ord to the northern foothills of the Superstition Mountains. They had been well paid for the trip and, in a merry mood, they traveled fast, single file, chanting their tribal songs as they hurried along.

While passing through the high rocky ground a few miles north of the Superstition Mountains, the young bucks suddenly came upon two skeletons. Upon closer examination, they appeared to be white men, probably prospectors. The bones had bleached white from long exposure to the elements and lay over a considerable area, evidently disturbed by coyotes

and carrion birds. Nearby lay a number of old brass shells of the large caliber used in guns of that early period in the West. A few badly rusted cooking utensils, mining tools and other pieces of camp equipment lay scattered over the ground near a shallow mining shaft. On one side of the rude working was a pile of ore containing yellow metal that sparkled in the sunlight. Thinking the rock might be of some use to tribal craftsmen, the bucks gathered a few of the larger pieces to take home with them.

It was late afternoon when they again set out for the reservation. They skirted the sandy lands on the west side of the Superstitions and by late evening arrived at an ancient waterhole between Queen Creek and the

north end of the San Tan Mountains. They stopped here to quench their thirst and to rest for the night.

Just before sunset, an old prospector came to the waterhole to fill his kegs and water his burros. The animals drank their fill and stood dosing in the warm light from the setting sun, while the prospector busied himself filling the kegs and making ready to return to his camp high in the foothills of the Superstitions.

His tasks done, he stopped to chat with the young Pimas who were preparing their evening meal of small game they had killed along the way. Seeing the pile of ore that the Indians had carelessly thrown on the ground, the old man casually picked up a few pieces and was surprised to find them flecked with bright yellow gold. Not wishing to excite the Pimas and hoping to disguise from them the value of their find, he threw the ore on the ground. "It is no good," he told the bucks, and advised them to throw it away.

The next morning when the prospector returned to the waterhole the Indians were gone; but he was delighted to find they had left a few pieces of the ore behind. After water-

ing his burros again, he gathered up the rich samples and hurried back to his camp in the mountains. He ate a hasty meal, then saddled one of his burros and set out to backtrack the Indians to where they had found the ore, the shallow shaft and the two skeletons they had told him about the night before.

He found the trail easy to follow until he came to the high rocky country north of the Superstitions, where it disappeared among barren boulders. He rode in circles, cutting for signs, but was unable to find any tracks beyond the desert's edge and the soft sand. It was growing late, and the tired old man reluctantly decided to return to camp for the night and later plan another trip into the high rocky ground that lay beyond the desert to the north.

Anxious to know what the ore would run in gold, he took the samples to the assay office in Phoenix. Joe Porterea, an old-time assayer well known to many pioneers of the state, tested the gold-studded quartz, and the certificate he turned over to the prospector showed that it ran \$35,000 per ton in gold and showed every evidence of having come from the country where the Pimas said they had found it—

between Mt. Ord and the northern slopes of the Superstitions.

After celebrating his good fortune for several days, the old man returned to his camp to plan a campaign that would enable him to keep the secret of the mine while locating the old shaft and reap its benefits for himself.

In the years that followed, he managed to guard his secret and to live off the country while he searched the rocky wilds for the lost gold. Finally, when too old and feeble to face the continued hardships of life alone in the desert, he revealed the secret to others. Several took up the search, but like the old prospector, they never were able to locate the right place.

Disillusioned and broke, the old man spent the last years of his life hanging around saloons and gambling houses in Phoenix, where he earned many a free drink or a good meal by showing the small pieces of rich quartz and telling his story to new arrivals in the frontier town.

Evidently the old man had not lived in the West long enough to learn that Indians, traveling on foot or on horseback, often follow a straight course. By drawing a straight line on a map from the north end of the Superstitions

to the southern slopes of Mt. Ord and then prospecting along both sides of the line, he might have located the lost ledge.

Another story seems to explain the construction of the crude mine shaft and the two whitened skeletons the young Pima guides found near it.

One day, during the time United States soldiers were stationed at Fort McDowell in the Apache country north of Phoenix, two soldiers went out deer hunting across the Verde River east of the fort. They returned that evening loaded down with all the rich gold ore they could carry. The ore was a white milky quartz generously flecked with free gold; the metal recovered from it was sold in Phoenix for \$1400. Soon after the two soldiers returned to the high rocky location between the Superstitions and Mt. Ord, but they were unable to find the white ledge they had discovered while trailing a wounded deer that day and from which they had broken the rich ore.

After being discharged from the army, the soldiers are believed to have made their way back into the country and again taken up the search for the lost ledge. The skeletons found by the young Indian guides most likely were theirs. Successful in rediscovering the gold lode, they probably had been killed by Apache renegades hiding out in the caves of the Superstitions long after Geronimo and his band of warriors had been rounded up and placed on reservations.

There are yet a few old Pimas on the Sacaton reservation along the Gila River who were members of the guide party which first found the soldiers' ore. They might have led the old prospector back to the rich gold lode, but he selfishly kept his secret until he no longer could hope to benefit from it.

Prize Picture Contest - for October

With the coming of October and the cool fall months on the desert, the camera fraternity will be starting their seasonal trek to the land of colorful sunsets and long shadows. The desert offers both clear days and cloudy days—and such a wide variety of subjects as are to be found nowhere else. In order that the best of the pictures taken by Desert Magazine readers may be shared with others, Desert's staff offers cash prizes each month for photographs submitted in our Picture-of-the-Month contest.

Entries for the October contest must be in the Desert Magazine office, Palm Desert, California, by October 20, and the winning prints will appear in the December issue. Pictures which arrive too late for one contest are held over for the next month. First prize is \$10; second prize \$5.00. For non-winning pictures accepted for publication \$3.00 each will be paid.

HERE ARE THE RULES

- 1—Prints for monthly contests must be black and white, 5x7 or larger, printed on glossy paper.
- 2—Each photograph submitted should be fully labeled as to subject, time and place. Also technical data: camera, shutter speed, hour of day, etc.
- 3—PRINTS WILL BE RETURNED WHEN RETURN POSTAGE IS ENCLOSED.
- 4—All entries must be in the Desert Magazine office by the 20th of the contest month.
- 5—Contests are open to both amateur and professional photographers. Desert Magazine requires first publication rights only of prize winning pictures.
- 6—Time and place of photograph are immaterial, except that it must be from the desert Southwest.
- 7—Judges will be selected from Desert's editorial staff, and awards will be made immediately after the close of the contest each month.

Address All Entries to Photo Editor

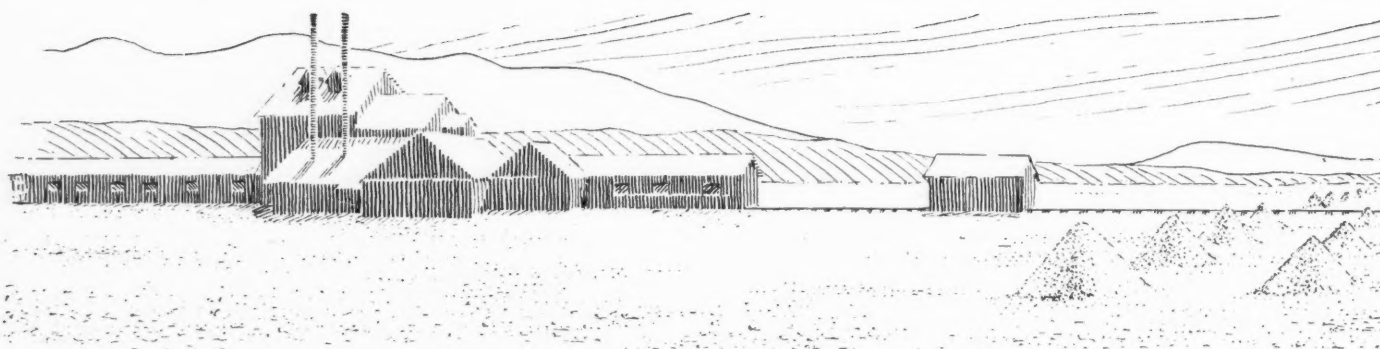
The Desert Magazine

PALM DESERT, CALIFORNIA

TRUE OR FALSE ANSWERS

Questions are on page 12

- 1—False. The Chuckawalla is harmless.
- 2—False. The atlatl was used as a weapon for killing game.
- 3—False. Tuzigoot Ruins National Monument is in Arizona.
- 4—False. Rose quartz has a hardness of 7. Calcite is 3.
- 5—False. Taking petrified wood out of the Monument is forbidden.
- 6—True. 7—True.
- 8—False. The Mojave River ends in a series of desert playas.
- 9—True. 10—True.
- 11—False. The Shivwits Indians are in Utah.
- 12—True. 13—True.
- 14—False. The flower of the Joshua Tree is creamy white.
- 15—False. Winnemucca derived its name from a famous Paiute chief.
- 16—False. Tinajas is a Spanish word meaning natural tank.
- 17—True. 18—True. 19—True.
- 20—True.



Old Salton Sea salt works—inundated in 1906-07.

The Salt in Salton Sea

By W. DEANE WILEY

THE JULY sun flickered over the horizon of the desert and dipped 265 feet below sea level to strike the backs of Indians plodding slowly to work. Before many hours had passed, a thermometer on the main building registered 130 degrees. Across the corner of a 1000-acre field the Indians worked, heedless of the heat and the glare reflected from a surface of such dazzling whiteness that few white men dared look at it for long except through smoked glasses.

This is how the New Liverpool Salt Company might have looked to a visitor in the year 1884. At that time there was no Salton Sea as we know it today. In its place was a vast bed of shifting sand and alkali flats. Located at the northern end, about 12 miles from the town of Mecca, was one of the largest salt fields in the United States. The deposit, essentially rock salt, covered almost 1000 acres.

On January 15, 1855, the New Liverpool Manufacturing Company, later the New Liverpool Salt Company, was granted articles of incorporation by the California State Department. The gold rush was not yet 10 years old, but this group of men, headed by George W. Dubrow, saw more gain in the white gold of the Salton Sink than in the yellow gold of stream and mountain.

In its first year of operation, the company shipped 1500 tons of salt to the markets in San Francisco and increased this yield materially in its later years of operation. The salt was valued at from \$6.00 to \$34.00 per ton, according to its quality. The lowest grade was used for hide salt, and the more highly refined product was sold to druggists. For a while, when health cultists were extolling the beneficial

When the Colorado River broke through and created the present Salton Sea in 1905-6-7, it destroyed a thriving salt industry. For 50 years great salt beds in the Salton basin had been yielding thousands of tons annually of a product which was of unusually pure quality. Here is the story of the birth of the industry in 1855, its tumultuous life, and its sudden burial beneath the waters of a newly formed sea.

effects of ocean bathing, large quantities were sold as bath crystals.

Owing to the unusual purity of the salt—tests showed 94.68 percent to 97.76 percent sodium chloride—none of the refining machinery generally used by salt works was needed. The plant consisted of machinery for grinding and bagging and an aspirator through which the final product was put to insure cleanliness.

In gathering the salt, large four-wheeled plows were used. In the center sat an Indian workman who guided the machine across the bed. Motive power was obtained by attaching a band to the plows and then to dummy engines, situated on each side of the bed to pull it back and forth. The furrows were about eight feet wide and six inches deep, and each plow was capable of harvesting over 700 tons of salt per day. After the salt was broken with the plow it was piled into small mounds in and around the drying shed from where it finally was taken to the main mill. Here it was hoisted to the upper floor and placed in a bulkhead breaker which reduced it to particles of the same size. The particles were further reduced at a

burr mill, and the salt ended its journey at the bagging tables where it was made ready to ship to market.

One of the most amazing features of the salt bed was the daily depositing of new salt by seepage from underground water evaporated to leave a crust of almost pure sodium chloride which ranged in thickness from 10 to 20 inches. There was little danger of the bed ever being exhausted. In fact, during the entire time that the salt industry flourished in the Sink, only about 10 acres of the area had been plowed.

Until 1901 title to the land was vested in the United States government, and the New Liverpool Company had no deed to the property and therefore no legal right to the harvest. It was not long before a rival salt outfit, the Standard Salt Company, discovered this and brought it to the attention of government officials. The latter had no choice but to act, and the New Liverpool was ordered to vacate the deposit.

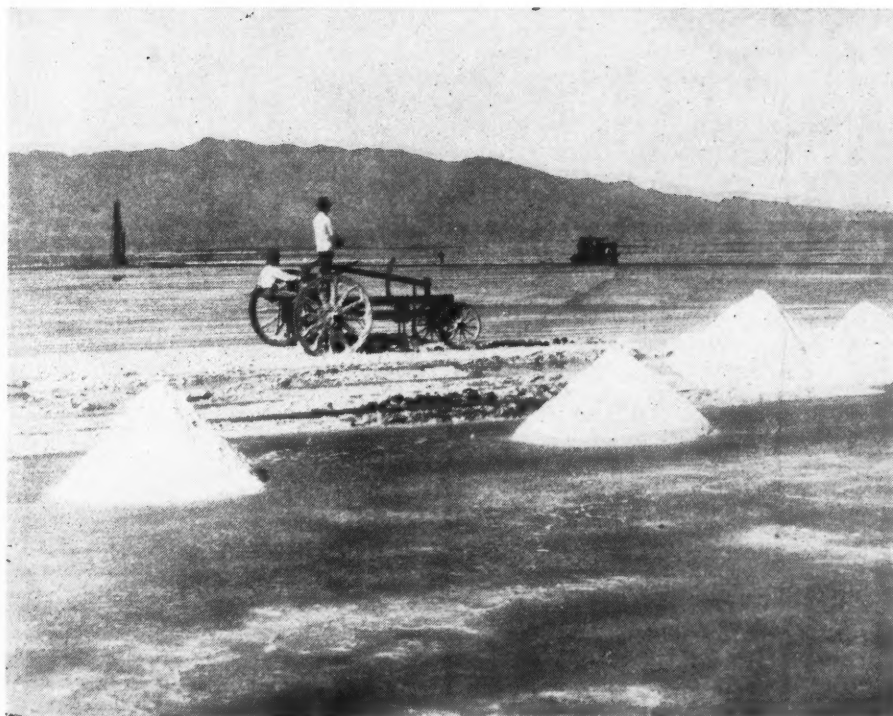
The New Liverpool Company then induced the Senator from Nevada, William M. Stewart, to come to its aid. Senator Stewart acted immediately, and on January 22, 1901, he introduced "An act extending the mining laws to saline lands." The bill was passed by the Senate and was sent to the President for signature.

While all this activity was taking place in Washington, a race was shaping up in the desert town of Mecca. Both the New Liverpool Company and the Standard Company had stationed agents in Washington and at Mecca, the closest telegraph to the salt fields, so that when the word came over the wire that the President had signed the bill, each might be the first to file on the land and therefore get the choicer sections. The Standard

Company had hired a team of horses and a buggy, while the New Liverpool Company chose to take its chances on an old railroad pump car running on the spur track to the field. The Standard Company also had secretly stationed a man on top of the telegraph office.

The message was flashed over the wire by the Washington agents of both companies. As the New Liverpool man ran to his men on the hand car, the Standard Salt man merely walked out to the middle of the street and called to the man on top of the telegraph office that the bill was signed and to let things go. This man jumped up and, in plain view of everyone, flashed a set of pre-arranged signals to a watching agent on the deposits twelve miles away. A compromise was effected later whereby the Standard Salt Company was placed on an equal footing with the New Liverpool outfit. In the Los Angeles directory for 1900 there is an entry to the effect that James S. Henton was manager of both salt companies, leading one to believe that a merger was effected shortly after the filing race.

The well-known story of the formation of the present day Salton Sea brought a sad ending to the enterprising salt companies. In trying to control the mighty Colorado River for irrigation purposes, California Development Company engineers turned the entire volume of the river inland, to the Salton Sink. Tons of water poured into the great depression, and damage totaling millions of dollars was listed by the Salt Companies and the Southern Pacific Railroad. This latter company was not to see the end of its trials with the river for several years after this flooding. It was destined to spend



Salt was harvested from the floor of the basin by two huge plows pulled by donkey engines stationed at the ends of the field.

over \$2,000,000 and tie up more than 1200 miles of main line track in one attempt after another to close the break.

The two salt companies immediately instituted suit against the development company in the Superior Court of Riverside County. On the petition of the development company, the case was removed to the Circuit Court of the United States for the Southern Division of the Southern District of California.

The suit was brought for \$200,000 damages and an injunction to restrain the development company from caus-

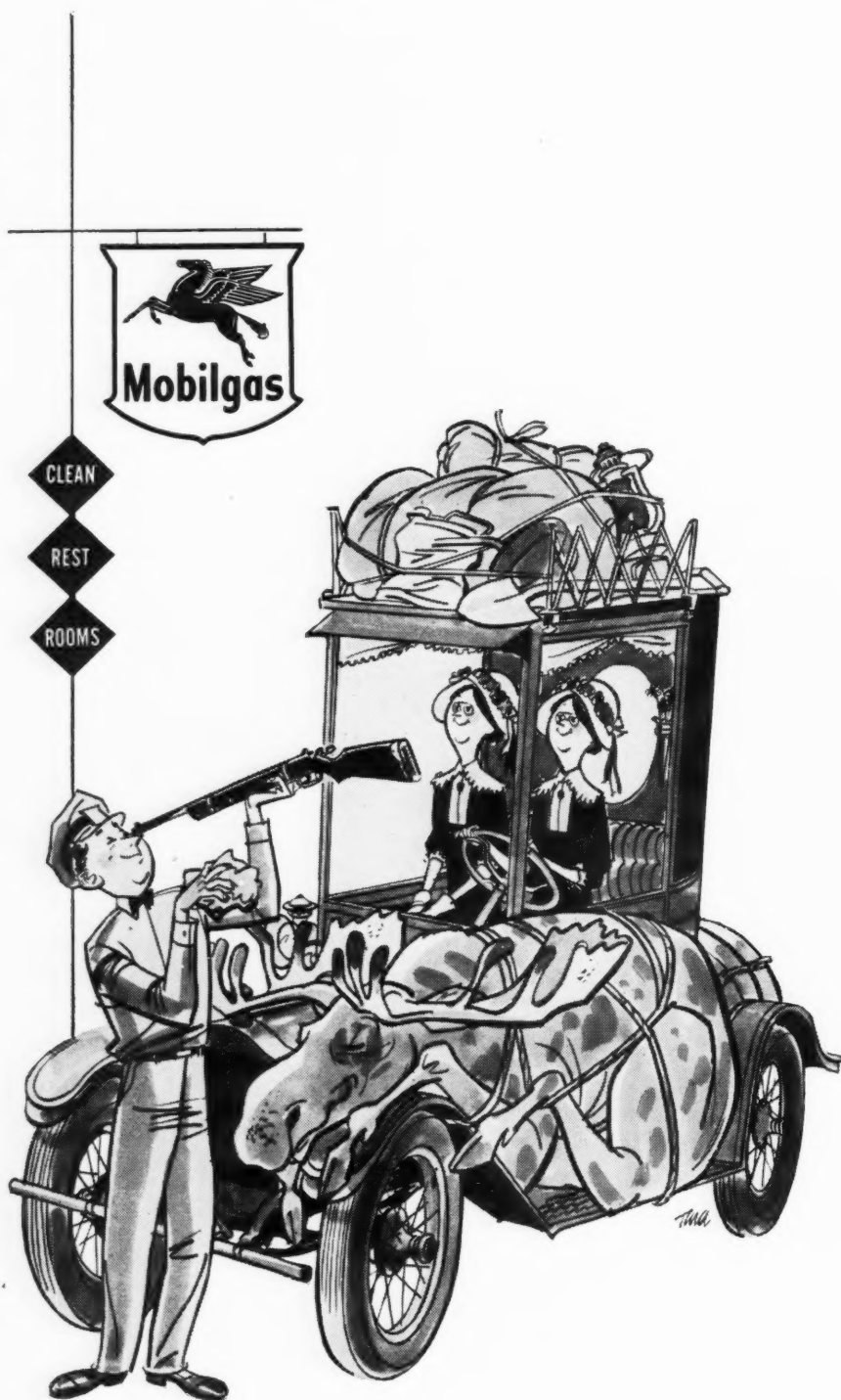
ing more water to flow into the Salton Sink. A bill supplementing this original one was presented January 29, 1906 for additional damage to the salt beds and plant. An extra \$180,000 was asked for the beds and \$30,000 for the plant.

By December 19, 1907, the salt companies' beds and plants were completely destroyed. Company officials then altered the supplementary bill to \$325,000 for lands and \$75,000 for plants to bring total damages to \$600,000. The Southern District Court

(Continued on next page)

The New River chasm across the Imperial Valley was formed by this flood torrent from the Colorado River as it flowed to the bottom of the basin—forming Salton Sea.





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granted damages of \$456,746.23 with costs, which amounted to \$1500.

The development company carried the case to the United States Circuit Court of Appeals where the judgment of the lower court was affirmed in a decision rendered by Judge Morrow in August, 1909. A re-hearing was denied by the same judge, October 4, 1909. The development company was not satisfied with this turn of events and appealed the case to the United States Supreme Court. But this court refused even to hear the case, and the salt companies finally won out.

According to written reports of the few who traveled the desert during the time of the salt companies, the sight was one of the most beautiful they had ever witnessed. The brilliance of the salt under the sun produced varied and attractive mirage effects. Today, as the casual traveler passes the great sea, he little realizes the activity that he might have seen 60 years before. Today, thousands of ducks alight on the great body of water, rowboats and speedboats ply the waves, and beach resorts line portions of the shore. The United States Navy has taken a large portion of the sea for experimental purposes.

Yet, while all of this activity abounds on the surface of the great land-locked body of water, beneath the sea lies a town, the remains of part of the main line of the Southern Pacific Railroad, the New Liverpool and Standard Salt Companies, and one of the largest and purest saline deposits in the world.

THE *Desert* MAGAZINE CLOSE-UPS

After having covered nearly all the western United States by foot, thumb and freight car, Walter Deane Wiley who wrote the story on the old Salton Sea salt works for this issue of *Desert Magazine*, finally landed in Southern California in 1940.

Wiley was born in the Sandhills of Nebraska and, after two years in the Navy as an officer candidate at the University of California at Los Angeles, he returned to his home state to study law at the University of Nebraska. He transferred back to California and received his bachelor's degree from Claremont Men's College, Claremont.

After graduation, Wiley accepted a position as credit manager for Imperial Hardware Company in El Centro. He presently is employed by the Food Machinery and Chemical Corporation, Riverside. His spare time he spends doing research and writing magazine stories.

DESERT MAGAZINE

Here and There - on the Desert

Labor Exploiters Warned . . .

WINDOW ROCK — The Navajo Tribal Council provided jail and fines for wildcat recruiting of Indian labor in a resolution requiring all recruiters to obtain approval of the tribal council and area Indian service director before being allowed to sign Navajos for jobs. Wildcat labor recruiters have caused much trouble and hardship, the Indian service reports, encouraging Navajos to leave the reservation and then putting them in poorly paid jobs and abandoning them.—*Arizona Republic*.

Plan Border Shrine . . .

BISBEE—Towering Coronado Peak in the Huachuca mountain range may someday be a point where thousands of tourists stop off each year. The Coronado National Memorial has been passed by Congress and approved by the President. The National Park Service hopes to develop the area within the next few years, planning eventually to erect an observation station on Coronado Peak. It is hoped that Mexico will lay aside a portion of its lands on the peak for the creation of an international monument to the Spanish explorer who crossed over from Mexico into the United States more than 400 years ago.—*Arizona Republic*.

Modern Apache Education . . .

FORT APACHE—When the first school was started in a vacant soldiers' barracks at old Fort Apache in 1892, cavalry troopers were called upon to help round up reluctant Indian boys and girls who had been hidden out by their more reluctant parents. In 60 years the trend has changed from how-to-avoid to how-to-get-more schooling. Today the tribal council enforces compulsory attendance and is supported by parents of the boys and girls. The agency's Theodore Roosevelt School is attended by young Indians from Fort Apache villages as well as from other reservations in the state.—*Arizona Republic*.

Visitors Like Relics . . .

TOMBSTONE — The restoration exhibit in Tombstone's Schieffelin Hall is proving popular with tourist visitors. Displays include old relics of mining days and other items of historic interest. A community project, the exhibit is monitored by volunteers.—*Tombstone Epitaph*.

Shrubs Threaten Range . . .

PHOENIX—Worthless shrubs that infest range lands in the Southwest pose a problem for stockmen, says Walter Armer, extension livestock specialist at the University of Arizona. The most serious offenders in the state include cedar or juniper, mesquite, cholla cactus, prickly-pear cactus, burweed and snake weed. They have shown a noticeable increase over the past half century. Because of a deeper root system, shrubs can survive during drouths that would kill grasses. Also, shrubs use moisture during the winter months while grass lies dormant. With the encroachment of shrubs, the carrying capacity of the range is reduced, and, because the root systems of shrubs are not as good soil binders as the fine surface roots of grasses, erosion increases. Agricultural agents now are studying methods of shrub control.—*Arizona Republic*.

Okay Compulsory Education . . .

WINDOW ROCK—By a vote of 64 to 1, the Navajo Tribal Council endorsed compulsory education for children between and including the ages of 6 and 16 and also voted to permit officials of state-operated schools to exercise and enforce the law on Navajo children. The provision does not apply, however, to Indians of any tribe in which a duly constituted governing body exists until such body has adopted a resolution consenting to such adoption.—*Arizona Republic*.

Patrolmen Build Goodwill . . .

WICKENBURG — Arizona State Highway patrolmen have added a public relations service to their law enforcement duties. Each officer now carries a supply of "courtesy warning" letters to be handed to motorists in lieu of citations for minor traffic violations. The letter points out to the erring traveler that his trip might be seriously affected by having to appear in court and expresses the hope that the Highway Patrol's consideration will be rewarded by increased safety on the highways.—*Wickenburg Sun*.

Lions Kill 32 Sheep . . .

FLAGSTAFF—Lions slaughtered 32 sheep in a band of 1500 grazing in the Kendrick Park area in August, reported Sheepman Bert Babbitt. At current prices, the slaughter represents a loss of nearly \$1000. Ranchers surmise that the big cats have found deer so scarce in the area that they have turned to sheep for food.—*Coconino Sun*.



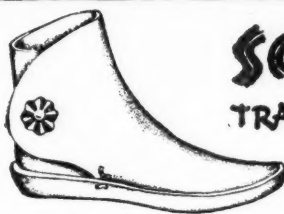
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MISCELLANEOUS

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CALIFORNIA

Experimental Trout Planted . . .

NEEDLES — After years of research, the California Bureau of Fish Conservation in July planted 50,000 fingerling rainbow trout in the Colorado River near here. Although rainbow trout have been caught in Lake Havasu and all points between Parker and Davis Dam, the water temperature is not considered correct for trout. However, the Arizona Fish and Game Commission placed several thousand trout in the waters just below Davis Dam about four years ago, and they grew so well with the ample food supply that a little over a year later 18 inch rainbows were caught. Richard D. Beland, who directed the plant, said the stocking was purely of an experimental nature. A close watch will be made, and if the fish thrive there is every reason to believe the river will become one of the favorite trout fishing streams in the state. — *Desert Star*.

Fresh Water from Sea . . .

WASHINGTON — Discovery of methods for taking the salt out of sea water at relatively low cost opens the way for turning bleak deserts around the world into rich farmlands, a Pennsylvania geographer believes. Dr. J. R. Smith, professor emeritus of economic geography at Columbia University, said California, Australia and Israel are areas most likely to profit from the large-scale use of de-salted sea water. Experiments have developed a filtering membrane made of coal tar and petroleum products which Smith said can de-salt 1000 gallons of sea water at an electrical expenditure of 20 kilowatts. According to the geographer, the process might save Los Angeles and other Southern California communities the trouble of getting their water from the Colorado River via a 200-mile pipeline. Cost studies indicate Southern California could get its fresh water from the sea through de-salting processes at about the same price, possibly lower, than the present cost of lifting river water across the mountains. — *Salt Lake Tribune*.

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Rain-Chasers for Dates . . .

INDIO — Rain, the bogey of all Coachella Valley date growers during the hot summer months when the crop is ripening, may be wooed away from groves by two skilled rain-chasers, if the plans of a group of growers are realized. E. S. Wallace and Walter Pulsifer, Mecca area ranchers, propose bringing to the valley E. F. Kooser and J. Dunbar, successful rain-chasers in the Rogue River and Wenatche areas. "The idea is to seed the clouds and disperse them to the areas where no crops are planted," Wallace explained. "The dry hill region surrounding the valley is a natural spot to force the rain to fall."—*Indio News*.

For Desert Travelers . . .

PALM SPRINGS—To make traveling across the desert easier for out-of-state visitors, Riverside County Supervisor Homer L. Varner has suggested building a series of roadside parks or shady shelters throughout the desert area from the Colorado River to San Geronio Pass. "On highways 60-70 from Blythe, tourists must travel 150 miles of desert roads; from Brawley, Highway 99 covers 85 miles before there is any relief from summer heat," Varner pointed out. He urges immediate establishment of a park at the Colorado River Crossing at Blythe, one at Thousand Palms, one between Indio and Palm Springs, one between Imperial county and Indio on U. S. 99 and at least four between Blythe and Indio on Highways 60-70.—*Desert Sun*.

Lift Mexican Beef Embargo . . .

CALEXICO — The five and one-half year ban on the importation of Mexican beef cattle into the United States was lifted September 1 after investigation showed continued progress in the eradication of foot and mouth disease. Only two limited outbreaks of the cattle malady have been reported in Mexico in the past 2½ years. During the ban, a number of Mexican meat canneries were established which will lessen the effect of the ban lifting on American cattlemen.—*Palo Verde Times*.

Indians to Be Guests . . .

BLYTHE — Last year the Palo Verde chamber of commerce staged a barbecue for Indian farmers residing on the Colorado River Indian reservation. More than 800 tribesmen responded—including Mojaves, Chemehuevis, Yumas, Navajos and Hopis. It was a gala day for all concerned and the business men of Blythe have raised funds to stage an Indian barbecue again this year — on Saturday, October 25.—*Palo Verde Times*.



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CARSON CITY—Nevada motorists may receive 1953 license plates with copper-colored numerals against a green background instead of the familiar blue and silver combination. Plans to substitute a windshield sticker for 1953 plates were abandoned when the state was allotted sufficient steel for the job.—*Las Vegas Review-Journal*.

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LOS ANGELES

Cancel Antelope Seasons . . .

FALLON—Nevada antelope seasons planned for this year were cancelled at a meeting of the state fish and game commission. Failure of this year's fawn crop and scattering of the antelope population were given as reasons for the move.—*Fallon Standard*.

Rawhide Still to Get Mail . . .

RAWHIDE — The mail will continue to go through to the historic mining camp of Rawhide. Residents were worried for a while, after a notice was posted in the community that the U. S. postal department was considering discontinuing service on Star Route 75139, Nevada Scheelite mine and mill to Fallon. The 22 families served on the route complained to Nevada Senator George Malone, and plans to discontinue mail delivery were tabled.—*Las Vegas Review-Journal*.

Lake Gets New Lease on Life . . .

AUSTIN — Pyramid Lake, which had been vanishing slowly into the hot desert sands, received temporary respite from the runoff of unprecedented snow falls in the Sierras this year. Via the Truckee River, which connects Lake Tahoe, California, with Pyramid Lake, the desert land has received 1,090,000 acre-feet of water since January 1, and the lake level rose six to eight feet. The old lake will soon be back to its previous level, however, due to the heavy toll of evaporation and irrigation.—*Reese River Reveille*.

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THE *Desert* MAGAZINE
PALM DESERT, CALIFORNIA

Settlers Evicted for "Trespass" . . .

TONOPAH—When homesteaders—many of them combat war veterans—started to settle on the arid desert lands of southern Fish Lake Valley, they knew the land was unsurveyed. But they believed the valley had promise of becoming a rich agricultural area, and they set to work to reclaim the desert wastes. Many have spent more than two years developing the soil, building homes and drilling wells—proving that the ground is suitable for agriculture.

"We believed that someday the government would get around to surveying the land and that, in recognition of what we had done, would give us preference when permanent title was granted," explained one of the 75 Fish Lake Valley residents.

But in July, settlers were ordered off the lands by representatives of multi-millionaire E. L. Cord, owner of the Circle L Ranch, and the Bureau of Land Management. The Cord ranch demanded that the settlers be evicted so it could exercise a 10-year grazing lease on the land.

"We know this land is fertile, and there is ample water to irrigate it," said one settler. "Given the chance, we are prepared to prove it." The settlers have banded together, and have hired an attorney to fight the eviction order. — *Tonopah Times-Bonanza*.

Ask Relaxed Mead Control . . .

BOULDER CITY—The Boulder City Chamber of Commerce has asked the Department of Interior to relax government control of the Lake Mead Recreation Area to permit private and commercial competition improvements. Specifically, the businessmen ask permission to construct adequate fishing camps, winter residence sites and auxiliary emergency boat docks at several points along the lake shore. — *Las Vegas Review-Journal*.

Steamboats to Ply River Again . . .

BOULDER CITY—Bids have been issued by the Bureau of Reclamation for construction of a heavy-duty tugboat for use on the Colorado River near Needles, California. Time allowed for completion is 120 days, which means that sometime in 1953—just 100 years after the first steamboat plied the river—a new one will be coming around the bend. The first steamboat made its appearance on the river in 1853, and for the next 60 years paddle-wheelers churned the waters intermittently from Yuma to above Black Canyon, as the water levels allowed. The modern craft will be used to move the bureau's office of river control dredge to various locations.—*Las Vegas Review-Journal*.

NEW MEXICO Unearth Ancient Kiva Bells . . .

SANTA FE—Buried deep in the ventilator of the large kiva at Cuyamungue ruins, now being excavated north of Santa Fe, has been found the largest collection of kiva ringing stones ever found in the Rio Grande Valley. Numbering 23 in all, these kiva bells are rod-shaped stones with a measurement range of from four inches to well over a foot in length. Each stone produces a singular and distinct musical note.

The stones have been in use since prehistoric time, the Pueblo Indians employing them to summon the men of the village to meetings in the kiva. The bells were hung from a thong and struck with another stone. The clear, penetrating sound could be heard for a considerable distance.

The Cuyamungue find gives a wider range in tones and sizes than is represented by the entire collection held today by the Museum of New Mexico. —*New Mexican*.

Navajos May Buy Ranches . . .

WINDOW ROCK—In an effort to place Navajos and their stock off the crowded and hard-grazed reservation, the Navajo Tribal Council is considering buying three large ranches in the Southwest. The three tracts are the Frank Hubbell Estate south of Grants, New Mexico, a half-million acre spread which would cost \$3,500,000; the Howard Wilson holdings near Gallup and the Pojoaque-Picuris lands north of Santa Fe. Delegations already have been sent to inspect the three ranches, and the government is having technicians inspect range conditions. —*New Mexican*.

Students Save State Money . . .

SOCORRO—New Mexico is saving considerable money and time by having its mineral resources surveyed by a unique group of "dollar-a-month men." Under an arrangement between the State Bureau of Mines and Mineral Resources and Columbia University, advanced geology students are doing the job under expert supervision. Although they are paid only one dollar a month plus transportation, food and lodging, the students are given excellent opportunity for research study applicable to their Ph.D. theses. Dr. Charles Behre, Jr., Columbia professor of economic geology in charge of the group, estimates "as much as \$6000 a month is being saved by the state of New Mexico for every ten students employed under this arrangement." —*New Mexican*.

Caves Promised New Elevators . . .

CARLSBAD—Two new elevators, capable of handling 25 persons each, have been promised for Carlsbad Caverns to replace the two small, slow, 11-passenger lifts now being used. With guided tours sometimes numbering 1550 persons, long waits are necessary unless tourists walk out of the caves, a climb of about 1000 feet. —*New Mexican*.

TB Foremost Indian Killer . . .

WASHINGTON — Dr. Fred T. Foard, chief of the health branch of the Bureau of Indian Affairs, has blamed the American people for "inexcusable health conditions" among the Indians, who have a five times greater death rate from tuberculosis than the rest of the population. It is the foremost killer among the American Indians. —*New Mexican*.

TAOS—Gerald Nailor, the Picuris Pueblo Indian artist who painted the murals at the Department of Interior building in Washington, D. C., died in August from an injury received in a fight. Nailor, 36, also created the murals in the Navajo Tribal Council building at Window Rock, Arizona. He was best known for his paintings of horses. —*Arizona Republic*.

Ready Kit Carson Park . . .

TAOS — Preliminary work at Kit Carson Memorial State Park in Taos has been completed, and park facilities are immediately available for tourists and local residents. A road from the main entrance has been constructed and tables, benches and restroom facilities are provided. Visitors will find ample parking space in the picnic area and may walk from there to the adjoining cemetery where the famous scout is buried or to his home on Carson Road. Dedication ceremonies will be held later this year. —*El Crepusculo*.

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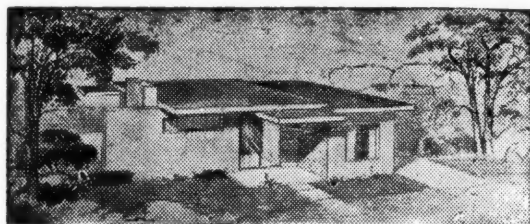
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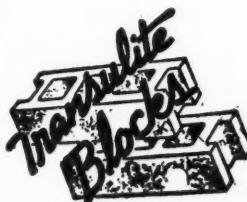


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Tuition Plan for Indians ...

ALBUQUERQUE — The Indian Bureau and public school officials have an agreed policy of turning Indian education over to the state as this procedure proves to be practical. Such a program, however, is dependent upon federal aid. A new contract for education of Indian children in New Mexico public schools allots \$125,897 of federal funds to 18 school districts. The amount compares with \$42,000 given the state last year for Indian instruction.—*New Mexican*.

UTAH

Museum to Mold Dinosaur ...

VERNAL—A gift from Carnegie Museum, Pittsburgh, will make it possible for the Utah Field House of Natural History to have on display the skeleton of a 76-foot long dinosaur, Diplodocus. The Museum will form the bones from original molds cast from a Diplodocus excavated at Dinosaur Quarry and now on display at the Carnegie Museum. The skeleton, almost perfect, of one of the largest prehistoric reptiles ever unearthed caused so much comment soon after its discovery that Andrew Carnegie had a complete set of molds cast to make ten complete Diplodocus skeletons which he presented to foreign museums. No longer needed at Carnegie, the molds were offered to the Utah Field House.—*Vernal Express*.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, AND CIRCULATION REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233)

Of The Desert Magazine published monthly at Palm Desert, California, for October, 1952.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Desert Press, Inc., Palm Desert, California; Editor, Randall Henderson, Palm Desert, California; Business manager, Bess Stacy, Palm Desert, California.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.) Lena Clements, Paul Gilbert, Clifford W. Henderson, Cyria Henderson, Randall Henderson, Evonne Riddell, Martin Moran, Nina Paul Shumway, Bess Stacy all of Palm Desert, California; Phillip T. Henderson, Pasadena, California; Vera L. Henderson, Los Angeles, California; Lucile Weight, Twentynine Palms, California.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: Bank of America, Indio, California.

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RANDALL HENDERSON, Editor
Sworn to and subscribed before me this 20th day of August, 1952.

LOIS E. ROY
(My commission expires May 17, 1954.)

Reclamation Work Mapped ...

SALT LAKE CITY—Upwards of five million dollars in construction expenditures during the coming year has tentatively been programmed by the Bureau of Reclamation in Utah and adjoining states. The total of \$5,614,700 estimated expenditure for the fiscal year of 1953 in Region 4—comprising Utah, Nevada, Southwestern Wyoming and Western Colorado—calls for spending \$2,603,500 on the Provo River project, largest single item on the budget. Most of this allotment will go toward completing the Duchesne Tunnel, scheduled to be finished within the calendar year. The completion of the Provo River project will assure irrigation supplies for approximately 46,000 fertile farmlands acres and for municipal and industrial uses.—*Salt Lake Tribune*.

Investigate Meteorite Fall ...

CIRCLEVILLE — Two astronomers from the University of Utah visited Circleville to investigate meteorite fragments which had fallen in Kingston Canyon. The scientists believed the fragments to be from the large meteor observed over western states in June.—*Garfield County News*.

"Galloping Goose" Doomed ...

MONTICELLO — Residents of Southeastern Utah's San Juan Basin remember the historic "Galloping Goose"—Rio Grande Southern narrow gauge railroad which operated for many years between Durango and Ridgway in Southwestern Colorado. With the decline of silver mining in the San Juan Basin country and the growth of trucking, freight revenues of the line dwindled to almost nothing. Now bankrupt, the company is forced to sell its rails and equipment. A Chicago firm is high bidder, offering \$409,000 for 172 miles of rails, some rolling stock and other equipment.

The "Goose" used steam locomotives to haul ore trains when mining was prosperous. In recent years its trains were powered by odd-looking units equipped with flanged wheels and automobile engines.—*New Mexican*.

Record Turkey Harvest ...

SALT LAKE CITY—As processing began in mid-August, it appeared that 1952 would be a record year for Utah turkey growers. The U. S. Department of Agriculture estimated that more than two million birds would be processed this year. Last year the state ranked seventh in the nation in turkey production, 90 percent of the crop being shipped to eastern and central markets.—*Salt Lake Tribune*.

Gems and Minerals

VALLEY SOCIETY NAMES OCTOBER SHOW COMMITTEES

Committee chairmen were appointed in August by the San Fernando Valley Mineral and Gem Society in preparation for the annual show October 25 and 26 at the Victory-Van Owen Playground, 12240 Archwood, North Hollywood, California. Harvey Chapman is show coordinator; Howard Trevelyan, relief coordinator; Laura Tuteur, exhibitor registrar; Henry Hasbach, treasurer; Elinor Waller, printing; Mrs. George McPheeters, prize ticket sales; George McPheeters, prizes; Albert Widick, dealer contact; Mrs. L. A. Scheidt, decorations; Larry Higley, case layout and general assembly; L. A. Scheidt, case setup and disassembly; Grace Johnson, publicity; Mr. and Mrs. W. H. Hobbs, refreshments; Evelyn Nelson, signs; Mr. and Mrs. McClure, grab bags; Margaret Hasbach, information; Ruth Chapman, registration; M. G. Sandaker, guard; William Taylor, electrician; and E. G. Lilberg, stage display.

In addition to gem and mineral displays—all of which will be the work of the exhibitor—the show will feature other hobbies of members: Indian artifacts, ceramics, hooked rugs, paintings and other collections or handiwork.

OCTOBER 4, 5 DATES FOR ANNUAL COMPTON SHOW

Amateur gem cutters and mineral collectors from throughout the Southwest are invited to attend the third annual show of Compton Gem and Mineral Club. Dates are October 4 and 5, and exhibits will be arranged in the Veterans of Foreign Wars Hall in Compton, California.

ORANGE BELT MINERAL SHOW DUE OCTOBER 25, 26

Drawing exhibit material exclusively from its own membership, Orange Belt Mineralogical Society will hold its sixth annual show October 25 and 26 in the industrial building on the National Orange Show grounds, San Bernardino, California. Last year nearly 6000 visitors viewed the society's gem and mineral displays.

COAST SOCIETY'S SHOW SLATED OCTOBER 25, 26

Santa Cruz Mineral and Gem Society will hold its second annual show October 25 and 26 at the Arts League building in Santa Cruz, California. A fluorescent display is planned as one feature, and dealers have been invited to display gem and mineral specimens and lapidary equipment.

EDITOR SUGGESTS CHARGE PUBLIC, NOT EXHIBITORS

An editorial in the August issue of the *Sooner Rockologist* suggests gem and mineral societies admit all exhibitors and dealers without charge to their shows and operate instead by charging a nominal admission fee for the general public. "Keep the price low enough so the whole family can come," advises the editor. Good shows depend upon exhibitors who bring their private collections and dealers who show the latest machinery and equipment and offer specimens for sale. "It is hardly fair to charge them an entrance fee for contributing to the show's success," argues the *Rockologist*.

MORE WORKING EXHIBITS PLANNED AT LAPIDARY SHOW

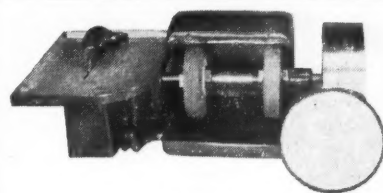
Southern California Lapidary Association will hold its 1953 gem and lapidary show at the Long Beach Auditorium August 14 through 16 of next year. The show will emphasize developments in technique and craftsmanship in the lapidary field and will include some of the foremost collections of stones and workmanship.

ROADS TO HOUSTON, TEXAS ABOUND IN COLLECTING SITES

"From east or west, the rockhound visitor to Houston, Texas, passes through rich mineral-collecting areas," Hugh Leiper pointed out to board members of the Rocky Mountain Federation of Mineral Societies in promoting the Texas city as the federation's 1953 convention site. Houston's bid was accepted, and the show will be held in May in the city coliseum. The coliseum, near downtown Houston, offers 84,000 square feet of display space, modern facilities and ample parking area.

Enroute to Houston, the rock collector can visit the Big Bend, Alpine and Marfa agate and mineral regions which have produced some of the country's most beautiful plume, bouquet and pom-pom agate. He can visit the Central Mineral Region near Llano and Mason, Texas, where semi-precious gem topaz is found. Near Smithville and Moulton in the Catahoula formation is a region of palm wood and other agatized and opalized woods. Eastern visitors will find it interesting to stop at Murfreesboro, Arkansas, where the only actual diamond pipe of kimberlite on the North American continent is located; and at Mt. Ida, Arkansas, where fine crystals and clusters have been found. Magnet Cove, famous to museums all over the world for the abundance of its many rare minerals, is ten miles from Mt. Ida.

Mineral, chemical, oil and mining enterprises in the Houston area will be invited to prepare exhibits for the show, convention officers have announced. W. V. Vietti of Houston is new Rocky Mountain president.



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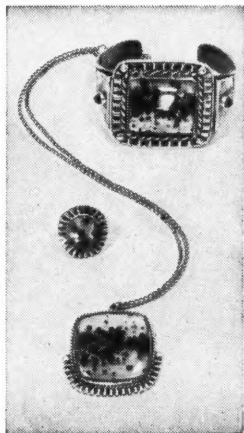
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AMONG THE ROCK HUNTERS

Harold Butcher, president of the Yavapai Gem and Mineral Society for 1948-49, was re-elected to that post at an election meeting in Prescott, Arizona. Anton Baurmann is new vice-president, and Mrs. H. G. Porter will serve as secretary-treasurer.

Each month, some member of Delvers Gem and Mineral Society, Downey, California, displays his mineral collection or lapidary work at the Downey Public Library. Exhibitor for August was Dick Felsch, who showed pieces from his collection of shells, fossils, crystals, copper minerals, petrified wood and cabochons.

His mineral collecting forays into the war-torn orient were described by Clayton Gibson at a recent meeting of the Tucson Gem and Mineral Society. Among specimens he displayed were two exceptionally fine pieces of rutile in quartz and some stibnite crystals from Japan.

Four members of Dona Ana County Rockhound Club, Las Cruces, New Mexico, formed a panel to discuss garnets at the club's August meeting. Topics were: "Description and Varieties," Dorothy Smith; "Formations in Which Garnets are Found and Known Locations," A. E. Archer; "Method of Deposition," Mrs. Eva Henderson; and "Commercial Values and Possible Markets," Mrs. Vera Archer.

Everyone found prizes on a unique "field trip" of Humboldt Gem and Mineral Society, Eureka, California. Members chose specimens from the collection of Mr. and Mrs. Charles Jack, who were forced to give up the hobby by Mr. Jack's ill health.

Semi-precious stones, often of unusual quality, are to be found in nearly all parts of the state of Idaho, reports *Pebbles*, bulletin of the Everett Rock and Gem Club of Everett, Washington. Agate, jasper and opal as well as agatized and opalized woods are in the lava flows of the southern part; sapphires, rubies and garnets are found in central and western sections and gem-quality opal lies in the Columbia lavas of the north.

July meeting of the El Paso Gem and Mineral Society, El Paso, Texas, was held in the gardens of Mr. and Mrs. J. W. Unsell. Following picnic supper, Captain Bruce Smith showed colored pictures he had taken while stationed with the army in Alaska.

Members of Southwest Mineralogists, Los Angeles, had so much fun panning for gold on a recent field trip outing that they staged a repeat performance. Both trips were held at Williams Flat on the east fork of the San Gabriel River.

Al Stoltz of Pasadena Lapidary Society mapped a Labor Day field trip to Willow Creek, California. He promised good hunting for agate and jade.

A jasper location along the Pacific coast between Hermosa and Redondo Beach, California, was the August field trip destination of Delvers Gem and Mineral Society, Downey, California.

Pete Kloehn cooked barbecued beef for the annual summer picnic of Long Beach Mineral and Gem Society. Games and dancing followed supper.

NATIONAL DEFENSE AND THE MINERAL INDUSTRY

A report on the mineral industry of California, its status and relation to national defense in 1950-51 is included in the January issue of the *California Journal of Mines and Geology*, published by the State Division of Mines.

The mineral report, prepared under the direction of L. A. Norman, Jr., supervising mining geologist, includes complete data on mineral fuels, nonmetallic industrial minerals, and metals.

Also included in this journal, first number of Volume 48, is a detailed analysis of mines and mineral resources of Glenn County, California. A map enclosure shows all locations. "Mineral Needs and Problems of the Lead-Acid Storage Battery Industry in California" by Dudley Haskell, research chemist, is published with maps, charts and halftone illustrations.

The California Division of Mines, Ferry Building, San Francisco, distributes the journal.

An average run-of-the-mill diamond is approximately 25,000,000 years old and about 2000 cubic feet of blue ground had to be mined to find it. About 320,000 cubic feet of blue ground had to be mined to produce a colorless, flawless diamond of one carat. Diamonds occur in almost all colors and some are colorless. All but the brown and pale yellow are called fancies and bring a better price. The country that does not have the largest stockpile of diamonds for industrial use, may well be the country that will lose the next war. There is no substitute for the diamond, nature's hardest material.—*Rock Hounds Call*.

A. L. Jarvis of Watsonville, California, discussed his mineral collection at a meeting of Fresno Gem and Mineral Society. The talk followed potluck supper at Roeding Park in Fresno.

In a light rain, members of the Earth Science Club of Northern Illinois looked for agate near Bellevue, Iowa. After collecting good specimens, several went on to explore Maquoketa and Crystal Lake caves.

A new competitive project was launched by the San Jose Lapidary Society at its September meeting. Each member was asked to bring his prize specimen of Montana agate for judging. Succeeding months will feature other gems. Grade points cover showing, 10; shape, polish, composition and quality, 5 each.

Beautiful orange-red jasper was found along the beach at Willow Creek, California, by the San Fernando Valley Mineral and Gem Society. Members chipped iron pyrite pieces from the cliffs and good specimens of jade, serpentine, and actinolite also were collected.

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W. Scott Lewis projected a series of slides for members of Hollywood Lapidary Society, explaining how gem minerals were cut and used by modern man for ornamental purposes. Of special interest was a slide showing jadeite crystals, the only specimen ever found. That the crystals are true jadeite has been confirmed by George S. Switzer of the Smithsonian Institution.

A film on the conservation of forests and wildlife was shown by Larry Griffith, Frank Murray and John Murray at a meeting of Southwest Mineralogists, Los Angeles.

Dru Benefiel brought her electric kiln to a meeting of Compton Gem and Mineral Club to demonstrate techniques of enameling on metal. She displayed examples of her enamel handiwork.

On a spring field trip to Newaukum and Salmon Creek in Washington, Everett Gem and Mineral Club members found some agate, coprolites and vivianite.

Marcus Whitman Gem and Mineral Society of Walla Walla, Washington, made a field trip to the Opal Butte district near Heppner, Oregon. A bed of thunder eggs is located at the top of the heavily timbered butte which rises to 4800 feet of elevation. The eggs lie in a layer of loose soil and gravel almost two feet thick, and society members reported it was hard work uncovering specimens. Prize find of the day was a transparent blue hyalite opal nodule the size of a large egg. The largest thunderegg found weighed 118 pounds and measured approximately 15 inches in diameter.

Paso Robles Mineral Club was invited to prepare a gem and mineral exhibit for the San Luis Obispo County 16th District Agricultural Fair August 21 through 24 in Paso Robles, California. Among the displays planned were Monterey jade carvings, Nipomo sagenite and plume marcasite, Stone Canyon jasper and rare biconoids from the Templeton area.

Junior members of Colorado Mineral Society visited the Bureau of Mines mineral exhibits at Colorado State Museum in Denver.

Rock-hunting locations in Colorado and Nebraska were discussed by Mr. and Mrs. Walter Peck at a summer meeting of the Western Nebraska Mineral Society. The Pecks showed maps and pictures from magazine articles.

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Blue Topaz, Brazil	per gram	.05
Amethyst, Mex.	per gram	.05
Amethyst, Mex. (Cloudy)	per gram	.02
Turquoise, Miami, Ariz. (Large pieces,	per gram	.08
top blue color, very hard)	per gram	.08
Turquoise, Nevada (Nugget form)	per gm.	.04
Fire Opal in Matrix, Mex.	per piece	.25
Clear Opal in Matrix, Mex.	per piece	.15
Clear Opal, no Matrix	per gram	.05
Sunstone, Idaho	per gram	.10
Bytownite, Penna.	per gram	.10
Apatite, Mex.	per gram	.10
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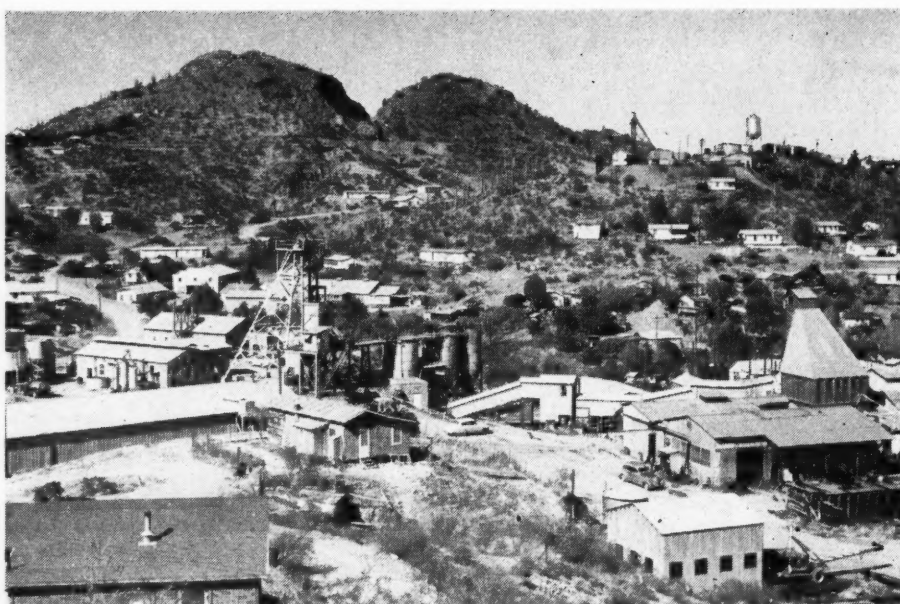
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Looking north across the town of Tiger, Arizona. Head frame of the Mohawk Mine rises in the left center foreground; that of the Mammoth Mine is half silhouetted against the summer sky in the upper right. The "V" in the mountains marks the glory hole that yielded specimens of Wulfenite, Vanadinite and Pyromorphite.

Gems, Minerals and Mines Along Southwestern Trails

Claude A. Conlin, Jr., captain of photography and publicity in the Los Angeles Fire Department, and Charles Crosby, a fellow rockhound, covered 2006 miles of Southwest mineral country on a 14-day vacation trip last fall. This is the second in a series of three stories describing the roads Conlin and Crosby traveled, the places they visited, the mineral specimens and gem material they found.

By CLAUDE A. CONLIN, JR.
Photograph by the Author

CHICK WALLACE, our friend from Kennecott, had assured Crosby and me we would obtain excellent specimens of wulfenite and vanadinite crystals from the Mammoth Mine at Tiger, Arizona. He told us to see George Griffith, who fills a unique position at the Mammoth. For \$12.50 a day, Griffith removes all crystal and mineral specimens exclusive of the commercial ores of lead and silver. Rules prevent the removal of this material by miners, but occasionally excellent specimens find their way out in lunch boxes.

Griffith sells the specimens he removes for the company and receives a flat 10 percent commission. The company finds it more profitable to pay Griffith for this particular job than to suffer the loss of tonnage resulting when miners use the company's time digging out unusual specimens.

Griffith's collection is extensive, and anything he has may be purchased or traded. Or almost anything, as Crosby discovered when he tried unsuccessfully to trade for a fine specimen of gem quality smithsonite. Griffith explained it had come from the oxide zone above the 600 foot level, and since the mine was currently being worked at 800 feet there seemed little chance that the piece could be duplicated.

Knowing a collector's love for ferreting out his own material, Griffith suggested we spend the next day working over the glory hole above the mine. This pit had been formed when old workings caved in. It is at least 200 feet deep, and the steep loose sides should be watched carefully for rock slides. Moving cautiously, we gathered wulfenite and vanadinite crystals.

At day's end we again visited Griffith to display our finds. He seemed particularly impressed with one specimen which he identified as an unusually good piece of pyromorphite, the first he had seen from the Mammoth workings. Griffith said 56 different crystalline specimens had been found and catalogued since he came to the mine.

George Griffith directed us to Cal Grissom, current lessee of the "79" Mine, four miles west of Winkelman. An excellent grade of smithsonite had been coming from this mine, so we looked up Grissom and introduced ourselves. The old timer, boisterously cordial, shook hands, bellowed, "You're as welcome as the flowers in May," my boys, welcome as the flowers in May," and happily gave us permission to visit the mine.

At the "79" we were greeted by Fred Beam, one of the two men employed by Grissom. Beam is an amazing character. What he hasn't learned about practical mining in his fifty-odd years could safely be forgotten. Lunch with him was an experience to be remembered.

Both food and coffee were cooked and served in cans; fingers and pocket knives served as utensils. But inconveniences were

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overlooked in the rapid flow of Beam's conversation. He seemed determined to relate every paragraph of his personal history. We found it difficult to interrupt but finally, explaining our impatience to see the mine, we managed an exit. Beam started to follow us but fortunately Grissom arrived just then, and Beam returned to work.

One of the most interesting things about the "79" property was the abundance of iron pyrite crystals. The workings were covered with specimens varying in size from one-quarter to one inch—a curse to the miners but a windfall to rock collectors.

That night we heard about the beautiful gypsum crystals at Crystal Cave. Directions were detailed, but at least five local residents told us we couldn't possibly drive to the site in our DeSoto.

Nevertheless, at 9 o'clock the next morning we headed out of Winkelman on the Tucson Highway. After 8.8 miles we turned sharply to the left, driving up a sandy wash 100 yards to an abandoned prospect hole. The small head frame is still visible, although collapsed.

A glance at the road ahead made us decide to abandon our utility trailer. For the next 300 yards the bed of loose angular rocks climbed sharply to a low ridge. From here to the end, 2.1 miles farther, the road is rough but solid and can be negotiated by any car providing the owner remains calm enough to steer while the catsclaw etches patterns in his paint job.

The road ends in a clearing centered by a stone monument three feet high. Looking northeast and down into the valley 100 yards away, a deep depression can be seen. It marks the two entrances to Crystal Cave.

Picking up our canteens, Coleman lights and rock hammers, we headed down a dim trail to the depression. We were skeptical. All caves we had ever visited lay in hills, never under the floor of a valley. But in a matter of moments we understood. This once had been an underground river and probably still carried water in seasons of heavy rain. A weak spot in the valley floor—about 100 feet in diameter—had dropped 30 feet to reveal the two entrances.

We chose the north entrance first, descending sharply down the loose gravel to the solid limestone cavern floor below. Average height of the cavern was seven feet, although in places it rose to 15 feet, in others diminished to a mere 18 inches. The width, exclusive of side chambers, averaged 30 feet. Walls glistened like diamonds with tiny crystals of gypsum. No stalactites or stalagmites were in evidence.

Approximately 300 feet from the entrance our path was blocked by water, and since there was no boat waiting for us, we backtracked. An Indian gas station attendant in Winkelman later told us that two men had taken a rubber boat into the cave the year before and reported they had gone back a distance of three miles before coming to a dead end.

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The south entrance proved more fruitful. There was less head room, and the grade was steeper; but it was bone dry. We wended our way through narrow passageways marking our line of travel with charcoal on the limestone walls. The same tiny gypsum crystals were abundant here also, but in addition we discovered broad veins of clear golden gypsum crystals.

As well as we could determine by pacing the distance, we had traveled a quarter of a mile from the south entrance. The end was not in sight, but since the air was becoming oppressive we decided not to explore further. The caverns are a maze of endless side passageways where a careless or imprudent person could easily lose himself.

The sun was sinking when we returned to the surface. We checked our watches. We had been underground five hours!

(In next month's *Desert*, Conlin and Crosby conclude their rockhunting adventure with visits to a gold mine in the Pinal Mountains, to Globe, Arizona, the petrified wood fields near St. John and the Valley of Fire in Nevada.)

C. A. Morrison gave the first of two talks on synthetic gems at the July meeting of the Gem and Mineral Society of San Mateo County. Ruby colored and pink sapphires have recently been produced, reported Morrison, and the golden, green and three shades of blue—all found in nature—are now being made. A garnet-colored sapphire, which does not exist naturally, is another development. The speaker traced the development and uses of synthetic spinel, sapphires and rubies. He will return later to discuss titania.

Hazel Scherzinger led a discussion of "The Electron Theory and its Application to Minerals" at a study session of the Orange Belt Mineralogical Society.

Los Angeles Lapidary Society was invited to display members' work at the Los Angeles County Fair, held in Pomona, California, September 12 through 28.

An overnight field trip was planned by Northern California Mineral Society to visit the petrified wood area near Nevada City. Members were to leave San Francisco August 2 and camp near the collecting site.

John Hutchings spoke to the San Diego Lapidary Society on "Minerals and Resources of Korea," illustrating his talk with colored slides. He pictured Korea as a modern country, with well-built stone and frame buildings, up-to-date factories and a system of hydroelectric power plants.

Members of San Diego Lapidary Society planned to spend Labor Day week-end searching for agate and petrified palm in Horse Canyon, California.

There are at present eight synthetic gem factories in the world: five in Switzerland, one each in the United States, France and Germany. Total production is 400 tons a year. A new factory, jointly owned by Indian and Swiss capital, is scheduled to go into production in July, 1953, in Madras, India. It will have a production of 12 to 16 tons per year.

Rita Matson will lead Santa Barbara Mineralogical Society through this year's activities. Elected to serve with President Matson are Ralph Colcord, vice-president; Mrs. Myra Cortiss, secretary, and Mrs. Mildred Orr, treasurer.

Glendale Lapidary and Gem Society has a new meeting place. Members gather the fourth Monday of each month at 400 North Central Avenue, Glendale, California. At the August meeting, the best field trip and vacation slides taken during the year were shown.

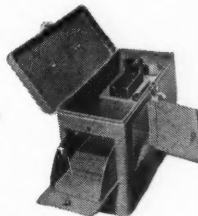
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The St. Louis Mineral and Gem Society, St. Louis, Missouri, will be host for the 1953 convention of the Midwest Federation of Mineralogical Societies. Approximately 3000 people visited this year's show to see mineral, geological and lapidary displays brought by exhibitors from throughout the midwest.

H. Paul Douglas, director of the Pacific Museum, has announced acquisition of the entire collection of Mr. and Mrs. E. L. Ur of Shell Beach, California. The stock includes the Urs' famous collection of more than a ton of rhodonite as well as much fine agate, agatized wood, faceting material and fossils. The museum is located in Shell Beach.

Newly-admitted to the California Federation of Mineralogical Societies are La Piedra Lapidary Club, Burlingame; Amador Gem and Mineral Society, Jackson; and Modoc Gem and Mineral Society, Alturas.

Members of Minnesota Mineral Club packed picnic lunches for a field trip outing to Mazeppa, Minnesota. Druzy quartz, agates and chert were found nearby in the dry washes of the Zumbrota area. Later, collectors viewed a collection of arrowheads and fossils in Kenyon, then continued to Lake Pepin to search the washes for more specimens.

New officers of Castro Valley Mineral and Gem Society are Von MacBride, president; Don Willis, vice-president; B. E. Sledge, secretary, and P. B. Kyle, treasurer.

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WASHINGTON SOCIETY HAS ACTIVE EDUCATIONAL PROGRAM

Three Rivers Mineralogy Society of Richland, Washington, has taken on a number of projects directed toward instructing school children in rock and mineral collecting and identification. The club supplies speakers for science class sessions and furnishes schools in the Richland area with boxes of specimens useful in classroom discussions. Most of the specimens are common to the Northwest and are the types of rocks often brought to class by pupils. Members also prepared a booklet explaining the collection, so that the teacher might discuss them even though she were not a rockhound herself.

A traveling display case filled with fine specimens loaned by society members is displayed at public libraries and city halls in the Three Rivers area. The exhibits are changed periodically and are interesting to adults and children alike.

"Rocks, like people, have character, personality and individuality," Edward Lang of Venice, California, told members of Santa Monica Gemological Society. The speaker suggested unorthodox cutting and displaying of minerals, treating each gemstone as a different and unique problem.

R. O. Deidrick, president of the California Federation of Mineralogical Societies, discussed copper replacement and the formation of copper minerals at a meeting of East Bay Mineral Society, Oakland, California. Deidrick demonstrated direct replacement with a pail of copper sulphate solution in which he suspended a large nail. The nail soon was coated with copper. This method of copper recovery was discovered accidentally by a miner who was in the habit of throwing his empty food tins into a mine creek. Later he was surprised to find they all had turned to copper.

Ft. Worth Mineral Club traveled to Lake Whitney Dam, 65 miles south of Ft. Worth and 15 miles west of Hillsboro, Texas, to gather fossils from a rudistid reef which outcrops near the dam on the Brazos River. Specimens fluoresce and phosphoresce under short-wave ultra-violet light.

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GAZINE

Amateur Gem Cutter

By LELANDE QUICK, Editor of The Lapidary Journal

There is one good thing about any rock show anywhere. It always turns up a new crop of wondering and wandering rockhounds. We know just about how successful a show was by the number of inquiries we receive following it. Some shows are very educational and we get no inquiries. Others show the rocks and gems and tell nothing about lapidary technique. Then we really do get some dilly letters.

We withhold the name of the following correspondent for obvious reasons. He writes—"visited with some of your boys at the So-and-So display case. Must have tarried too long as about one week later rock fever developed. Present symptoms run to agate slabs. First I want to ask a few questions which may sound silly, for that matter may even be so.

"1—In slabbing and trimming an average sample of selected agate weighing a pound, what would be the approximate general average of absolute waste? By absolute waste I mean pieces unfit for working into lamp shades of good quality, etc.

"2—In slabbing agates of 2x2 inches and upward in size what would be the hourly square inch average cut with a 16-inch saw?

"3—I note some advertisers quote slabs at \$1.00 or so a square inch. The rough selected stock from which it is cut is \$2.00 a pound. Is there any way of pre-determining the quality of an agate before it is cut? If not I presume one would do a lot better by buying selected stones in the rough and cutting them himself."

Well brother did you ever stand in a market and try to pick out a good cantaloupe? That's a little easier than picking out a good agate, for you have a sense of smell to go by. Having picked out what you thought was a good cantaloupe did you ever try to figure just how many bites there were in it by dividing the circumference by something or other or, having estimated the number of bites, did you then figure just how long it would take to chomp up the whole melon? That whole deal would sort of spoil the great thrill of knowing you had found a good melon and proceeding to enjoy it after it was chilled to just the right temperature in just the right degree of ripeness.

Anyone who approaches rockhounding in as cold and calculating a manner as our correspondent is never going to enjoy the hobby for the reason that he is never going to start. Fully 99 percent of the fun in lapidary work is putting a very unpromising rock into the vise, after puzzling several minutes about which way to turn it, and then standing by in high hope as the saw relentlessly inches through. The thrill that comes as the slice plops off and the saw hums high is akin to watching the horses coming down the stretch. It is this gamble that makes the rockhound's heart beat high and the blood pulse along his veins as he picks the oily slice from the goo and holds it up to the light to see its color and pattern. There are few rockhounds anywhere who consider themselves so wise that they can say, as they put the rock in the vise, "this one is really good." It is the experience of most of us that the more unpromising the rock is the more surprising it will develop.

Now as for value, the beginning rockhound will do better by buying slabbed material. No deal has ever been devised that is better and fairer than being able to buy selected slabs at so much a square inch with the privilege of returning for refund any slabs that are unsatisfactory. But that eliminates all the gamble; therefore most of the fun is lost.

There may be some who object to the use of the word gambling in our rockhound hobby but what other word would you use? Gambling is taking a chance and while the word has a stigma, we have to recognize that it is this gambling instinct that built America—the people who took a chance on coming here at all—who later took a chance in seeking new horizons, going ever westward until the whole country was settled. Certainly a rockhound with a pile of agates and a new saw becomes as big a gambler as the farmer who plants a field of corn and gambles with cold, heat, rain and drouth.

There are certain ways in which to cut each material of course and out of the wide experience of thousands of rockhounds certain methods have been developed for the most successful cutting. They have appeared in the now extensive literature of the several rock magazines and the information involved is too extensive to give in this limited space. If any reader has a question about any specific material we shall attempt an answer, or give the source of a good reference covering the subject, if postage is supplied.

The novice should remember this: The new photographer wastes a lot of money on bad pictures, under-exposed films and all the other problems of photography. The hunters and the fishermen return from many trips with no meat. The rockhound loses a lot of money on duds, even if he picks them up free. There is no formula for picking only perfect rocks, but experience, as in all things, is a great teacher.

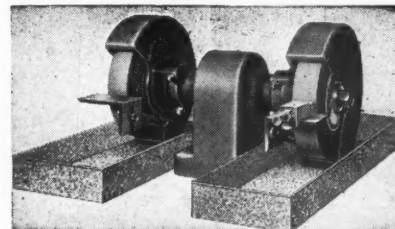
* * *

If we have any readers in the New York area we invite them to come and hear us talk at the Essex House in Newark, N. J. at 3 p.m. on Thursday, October 9. At that time we shall be attending the second annual convention, gem and mineral show of the Eastern Federation of Mineralogical and Lapidary Societies which will be in progress October 9, 10, 11. We will have a booth there and be available a great part of the time to meet our friends.

While the eastern shows have not attained the bigness of the western shows they have plenty to look at and enjoy in the world of rocks and the quality is of the highest. Our lecture will be on *The Second Stone Age*, the story of the rock hobby in America and we will tell you just why man is inherently interested in rocks and why rockhounding is now America's fastest growing hobby and at present its third largest hobby in the number of its followers.

There will be many other good program items during the three days and we hope that the experienced hobbyist will attend the convention and the mildly interested will do so too to investigate this fascinating hobby. Everyone is welcome and you do not have to be a member of any club to attend.

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OCTOBER, 1952



By RANDALL HENDERSON

WHEN WE wish to run away from the pressure of too much work, or too many social obligations, Cyria and I have two outlets which always bring relaxation. One of them is to put our bedrolls in the car and spend an evening by a little campfire of our own in a secluded desert canyon—and there are a hundred thousand such canyons in southwestern United States.

Our other escape is to journey over San Geronio Pass to the little Mexican dining room and theater at Padua Hills near Claremont, California. It is just a 2½ hour motor trip.

At Padua we are entertained by Mexican folk songs and dances as we eat a delicious dinner in a setting that was designed after the early Spanish ranchos in California. The thing we love about this quiet little retreat in the foothills near Claremont is the naturalness, the spontaneity and the enthusiasm with which the Mexican players fill the various roles assigned to them.

They are versatile people. At one moment they are doing a very gracious job of serving us with Mexican fried chicken or tacos, and at the next moment they are up on the little stage strumming a guitar or dancing the fandango. A little later in the evening the same waiters and waitresses and bus boys who served and entertained us in the dining room are on the theater stage entertaining us with native musical comedy that is charming because it is so simple and natural.

Perhaps one of the reasons why Padua has been able to preserve so much of the charm one finds in this place is that Padua Institute is controlled by a non-profit organization, designed merely to keep alive the Spanish and Mexican traditions of California's colonial days. Beauty and artistry are the goals at Padua—not profits.

* * *

For the information of those *Desert Magazine* readers who dwell within driving distance of Palm Desert, the art gallery which is so important a part of our institution here will be officially re-opened for the 1952-53 season on October 16.

Actually, we have had a very excellent exhibit of desert paintings on display all summer, but our building has been open only 5½ days a week, and we do not have many visitors when the temperatures on the desert highways range from 100 degrees up.

Harriet Day, who has been in charge of our art exhibition the last two years, will return in October, and during the fall and winter season will keep the gallery open seven days a week from eight until five. There is no admission charge, and the legend over the front door of the gallery reads: "Friend or Stranger, you are Welcome here."

* * *

One of the regular exhibitors in our gallery is John

Hilton, who also writes an occasional feature story for *Desert Magazine*.

Today I received a letter from John in which he writes some very uncomplimentary things about the so-called modernistic art now shown in many of the galleries. John's letter will be published next month, and in the meantime I will assure him that I agree with most of the ideas he expressed.

In our gallery here at Palm Desert we limit our exhibits to realistic presentations of desert subjects. I will admit I am just too dumb to understand the meaningless blobs of paint and the hideous distortions offered by the modernists as works of art.

John and I differ in one detail. He thinks it is a waste of time to paint a canvas which no one but the artist himself understands. I disagree as to this point. I think it is quite proper for an artist to daub paint on a canvas in any manner that pleases him, but that it is very bad public relations for a painter to reveal his inner confusion by putting unrelated splotches of paint on a canvas and then exhibit this eccentricity in public as a work of art. Such paintings should be hidden in the dark recesses of the attic or cellar, where only the artist himself would ever see them. They should be kept secret, like other personal vices.

* * *

In the editorial office of the *Desert Magazine*, as in every editorial office in the Southwest, the problem is always present—shall we spell it Navajo or Navaho?

Originally a Tewa word, the Spanish spelling is Navajo, with the "j" having the pronunciation of "h." Generally, the people of the Southwest, knowing and having become accustomed to the Spanish pronunciation of "j," have preferred the Spanish version. We like our Spanish words—San Joaquin, San Jacinto, San Jose, and we want them pronounced as Hoakin, Hacinto and Hosé. We find great delight in correcting tenderfoot visitors and other ignorant persons who use the ugly "j" sound in saying these words.

But the problem is becoming more complicated. Recently the tribal council of the Navajo Indians decided they wanted their name spelled Navaho. The reason they gave is rather difficult for an Anglo mind to understand. They have heard their returning GI tribesmen referred to as GI Joe—the good old name given to every buck private in the army. But somehow the Indians translated this into Nava-Joe—and they don't like it. They, too, like the Spanish pronunciation. They do not want that harsh "j" sound connected with their tribal name—and have asked that henceforth it be spelled Navaho.

This of course does not make Navaho the official spelling of the word. But it does leave a lot of us editors wondering what to do about it.

Books of the Southwest

BOOK ON INDIAN DESIGN ITSELF A WORK OF ART

A masterpiece of research, organization, illustration, printing and book-binding, *Indian Art of the Americas* by Le Roy H. Appleton is a full representation of the American Indians' contribution to world art. Based on original sources, it covers the entire field of North, Central and South America.

Author-Artist-Book Designer Appleton's illustrations were drawn and colored after the finest examples of Indian weaving, embroidery, basketry, pottery, metal-work, sculpture, painting and manuscript-writing. The 79 full-page color plates include more than 700 designs from 100 tribes ranging from the Arctic Circle to Cape Horn. The book has been 20 years in preparation.

The meaning and symbolism of the works are explained in the words of the Indians themselves—in authentic and beautiful tribal legends, creation myths and migration stories which express the philosophy and religious beliefs basic to the graphic designs. A general survey of craft techniques and brief but adequate introductions to each geographical section provide the essential background for appreciation of the art.

A work of art itself, *Indian Art of the Americas* is an invaluable reference for historians, lovers of Indian lore, artists, designers and teachers.

Published by Charles Scribner's Sons. 280 pages, 79 full-page color plates, index and bibliography. \$15.

FINE MAPS OF LOWER COLORADO AVAILABLE

While the new sportsman's atlas of the Colorado River and Lake Mead published by Sunset Magazine is designed primarily for those interested in hunting and fishing, the fine set of maps contained in this guide will make it an invaluable handbook for anyone having need for a detailed chart of the Colorado from the headwaters of Lake Mead to the Gulf of California. Text was written and maps prepared by C. E. Erickson.

The 15 maps contained in the booklet give complete detail as to the meanderings of the Colorado River, the shorelines of Lake Mead, Lake Mojave, Lake Havasu and Lake Imperial reservoirs, and the location of boats and living accommodations to be found along the stream and its man-made lakes.

The atlas also includes a navigation

guide for Lake Mead, and recent information as to the condition of access roads along both sides of the Colorado and the four reservoirs below Grand Canyon.

For the convenience of motorists who may have occasion to refer to the maps in all kinds of weather conditions, a transparent plastic envelope is furnished with each book, making it virtually waterproof.

Published by Lane Publishing Co., 1952. 32 pp. with 15 maps. Paper cover and plastic envelope. \$1.50.

EARLY INDIAN VISITS TO WHITE HOUSE TOLD

"I have listened to a great many tales from our great father," the century-old Indian said to his brothers. "But they always began and ended with this—'Get a little farther; you are too near to me.'"

This aged Indian might well have stood as spokesman for the countless and colorful Indian chieftains who, during the two centuries of the white man's relentless Western expansion, made the long pilgrimage to Washington to meet with the Great White Father in a futile effort to turn back the tide of encroaching white settlers from the lands of their forefathers.

Red Men Calling on the Great White Father is the story of these pilgrimages — many of which had grim conse-

quences for the destiny of the struggling young republic as well as for the despoiled red men. Author Katherine C. Turner tells of Miguel, the old warrior chief of the Apaches, and his visit to President Grant. The story of Sarah Winnemucca, the "Paiute Princess" who traveled twice to see President Hayes on behalf of her people, is related, and the terrible tale of Geronimo's treachery.

Told with deep understanding and clarity, the stories of these meetings of Indians with presidents produce sympathy for the dispossessed tribesmen and a feeling of the injustice of our Indian policy. At the same time, there is something thrilling in the impassioned prayers and the native dignity of proud Indian chieftains.

Red Men Calling is number 32 in the University of Oklahoma Press Civilization of the American Indian series. The 235 pages include index, bibliography and halftone illustrations. \$3.75.

Western America, with all its early color and thrills, is described by Mrs. F. A. Gillhouse, long-time desert resident now living in Las Vegas, Nevada, in her first book, *Pistol Pete*, published recently by Little Brown and Company. It is the story of Frank Eaton, veteran of the old West, cowboy, scout, Indian fighter and deputy U. S. Marshall. Although an Oklahoman, Eaton spent several years in New Mexico, and the book presents episodes in New Mexico history during the time of the famous sheriff, Pat Garrett.

MAPS OF THE LOWER COLORADO RIVER

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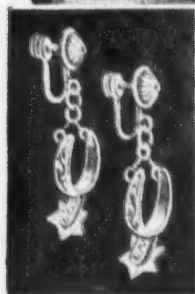
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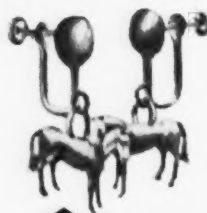
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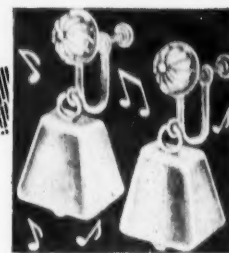
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